A Catalogue of the Flowering Plants and Ferns Found Growing Wild in the Island of Penang.

COMPILED BY

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THE Island of Penang, situated in Lat. 5° 24′ North, and Long. 100° 20′ East, has an area of about 106 square miles.

The greater portion is hilly, the highest point being West Hill, about the centre of the Island, which is 2,750 feet above sea level. Government Hill, on which many of the plants recorded have been collected, is about 250 feet lower. From an altitude of about 1,000 feet, and in some places much lower, these hills are covered with a varied and luxuriant vegetation, conspicuous among the larger trees being Dipterocarps, *Agathis loranthifolius*, *Dacrydium elatum*, Oaks, Eugenias, &c. Underneath these is found a heterogeneous mass consisting of seedlings of the larger trees intermixed with a variety of shrubs and smaller trees, all struggling for supremacy.

Deep ravines are numerous, the bottoms of which are a mass of more or less rounded granite boulders piled one on top of the other in great confusion, so that to cross from one side to the other is often a matter of difficulty. In many of these ravines, up to 1,500-2,000 feet, there are small but permanent streams of water that can only be detected by the

sound of their rippling several feet below the surface, where they have found a passage among the boulders.

It is in such places, where the direct rays of the sun never penetrate, growing on these boulders, that the great wealth of Ferns, Aroids, Medinillas, Rhododendron, *Cypripedium barbatum*, Didymocarps, Sonerilas, small Orchids and such like things are most abundant.

The soil of all the hills is very similar, being of a reddish or yellow colour, and composed mainly of partially decomposed granite. In the lower lands where the soil is of a different nature, and where one might naturally expect to find a somewhat different flora, forests have long disappeared, and with them probably many plants that were once common. When forests have once been felled and burnt off there is an end to the most interesting vegetation, at least for a long period. Even though no cultivation be attempted most of the trees, shrubs, etc., that spring up on the cleared land are different from the original ones, and of as little value commercially as they are botanically uninteresting. Among the first to assume possession, often to the exclusion of every other plant, is the "lalang" (*Imperata arundinacea*), and in places where this is absent "resam" (*Gleichenia sps.*). Of woody plants, *Rhodomyrtus tomentosa*, *Eurya acuminata*, *Trema amboinense*, and *Adinandra dumosa* are among the first and most numerous in a new clearing. The present site of the Botanic Garden had at some time in the earlier days of the Settlement of Penang been planted with cloves and nutmegs, but at the time the formation of a garden was commenced these trees had long been dead and the land was covered with secondary jungle, in many places as dense as that of the surrounding hills that apparently have never been cleared. Notwithstanding the fact that these hills rise abruptly on three sides and are covered to the summit with large Dipterocarps, Sterculias, Eugenias, Swintonia, etc., so that in a good seed-bearing season thousands of seeds must be washed down into the valley by the heavy rains, there was scarcely any trace of these re-occupying their original position on the land that had been cultivated.

What actually occupied the land was thousands of *Euyra*

acuminata, *Rhodomyrtus tomentosa*, *Melastoma malabathrica;* and in lesser numbers *Glochidium obscurum*, *Crypteronia pubescens*, *Morinda tinctoria*, and a few others. Where there were no trees the "lalang" had taken absolute possession.

The mean temperature of the Island is a little above 80 F., with a range of 14°-15°, and the average rainfall for the past five years 120 inches, spread more or less over the whole year, though most falls during the latter half.

There is no well-defined flowering season; some things can be collected at almost any time, while others appear to flower only at intervals of several years. During the past seven years there has been but one really good flowering season, which I attribute to the unusually long drought of the preceding period.

Several large collections of plants have, at various times, been made in Penang, the most important being those of WALLICH, MAINGAY, PORTER and PHILLIPS. A great many of the plants found by these, and other of the earlier collectors, I have been able to identify and hope yet to add largely to the number, but owing to the increased area under cultivation since their time, and the complete change that follows clearing, as already pointed out, it is probable that some of the plants recorded by them will not be again collected on the Island.

So far as I am aware no separate catalogue of plants collected in Penang has yet been published, and thus it is hoped that the present, though incomplete, may be of use to those interested in the botany and forestry of the region until material is available for a better.

Not having access to many books in which scattered records of Penang plants occur, I have included (in cases where I have not myself collected a specimen or seen the plant growing wild) only those for which Penang is given as a locality in the Flora of British India, Annals of the Royal Botanic Gardens Calcutta, and Materials for a Flora of the Malayan Peninsula, so far as these works are published; HOOKER'S Synopsis Filicum, and BEDDOME'S Ferns of British India. No doubt many plants, whose distribution is so general throughout the Malayan

Islands and the Peninsula that their occurrence in Penang is not mentioned in either of the above works, have been collected here, but if I have not seen them they are omitted from this list.

The earlier orders to the end of Tiliaceæ, and also Myristicaceæ and Cupuliferæ, have been carefully compared and determined by Dr. KING in the course of preparing the Annals and Materials, so that the determination in these orders may be accepted with greater confidence than others on which the same critical examination has not been brought to bear.

The most incomplete orders are those not yet taken up in the Flora of British India, as I have no means of ascertaining what species were collected by the earlier collectors, or of identifying those collected by myself. Mr. RIDLEY'S intimate knowledge of Orchids and Grasses has enabled me to identify nearly all the species collected.

Numbers bracketed thus (C. 241-259) are those under which specimens of the plant have been distributed, and the letter (C.) in brackets implies that though not distributed I have collected it, or it is well known to me in a living state. Malay names, where given, are printed in inverted commas, but these have been sparingly used, for, except in the case of plants used either as food or medicine, native names in Penang are unreliable. Even in the case of timbers in general use the same name is often applied to several species, and sometimes to trees belonging to different orders, so that their practical value as an aid to identification is not great. I am aware that in the other Settlement where there is still a considerable Malay agricultural population this does not apply with the same force.

I cannot sufficiently express my obligation to Dr. KING the Kew authorities, Mr. H. N. RIDLEY and Bishop HOSE for assistance in determining my collections, and I take this opportunity of requesting those who have received sets to kindly point out any errors of determination that may come under their notice, and to supply the names when wanting.

Penang, 12th November, 1892.

RANUNCULACEÆ.

Clematis smilacifolia, Wall.; strong growing climber. Penara Bukit, rare. (C. 1048).

Naravelia laurifolia, Wall.; long slender climber. Waterfall, rare. (C. 1709).

DILLENIACEÆ.

Delima sarmentosa, L.; woody climber with white sweet-scented flowers. Not uncommon. (C. 294).

Tetracera assa, DC.; climbing shrub; the commonest plant of this order. (C. 69.)

Tetracera macrophylla, Wall.; large woody climber. Government Hill. (C. 3008).

Tetracera, sp.; a larger and more robust plant than the preceding. Government Hill. (C. 1495).

Acrotrema costatum, Jack.; stemless, flower yellow; leaves silvery grey. Waterfall, common. (C. 456).

Wormia oblonga, Wall.; medium sized tree. Telok Bahang, not common. (C. 257).

Wormia Kunstlerii, King; tree 60-70 feet; fruit about 1 in. through, flowers not seen. Nalm Pass. (C. 2465).

Dillenia indica, L.; "Simpoh;" tree 40-60 feet; fl. white, 5-6 in. across. Not common. (C.).

Dillenia ovata, Wall.; small tree 20-30 feet; fl. yellow, 4 in. across, fruit globular 3-3½ in. through. Waterfall (C. 228).

Dillenia grandifolia, Wall.; I have not seen in flower, but have leaf specimens that agree with the description in Fl. B I. (C.).

MAGNOLIACEÆ.

Magnolia Maingayi, King; tree 30-40 feet; bark grey, fl. white, fragrant. Government Hill at from 2,000-2,500 feet. (C. 292).

Michelia champaca, L.; largely cultivated and often found on abandoned land, but not truly wild in Penang. (C.).

Talauma mutabilis, Bl.; small tree, fl. white, sweet-scented. Not uncommon. (C. 1022).

Talauma lanigera, Hook. fil.; Small tree. Government Hill, rare. (C. 3008).

Kadsura scandens, Bl.; woody climber, fl. almost white, about ½ in. in diameter. Penara Bukit. (C. 1529).

Kadsura lanceolata, King; slender woody climber. Not unconmon. (C. 2821).

Kadsura cauliflora, Bl.; stem stouter and leaves larger than in the preceding; carpel red, the size of a pea. (C. 2440).

ANONACEÆ.

Stelechocarpus, sp.; a tree 30-40 feet high, fl. greenish, carpel globular, ¾ in. Waterfall. (C. 2277).

Sageraea elliptica, Hook. fil.; a large tree. Not seen.

Cyathostemma viridiflorum, Griff. Not seen.

Cyathostemma Hookeri, King; long woody climber, fl. small, yellow. Waterfall and Government Hill. (C. 1213).

Uvaria dulcis, Dunal; woody climber, Government Hill and Muka Head, not common. (C. 729-1414).

Uvaria Labbiana, Hk. fil.; large climber; not common; at low elevation. (C. 841-1234).

Uvaria excelsa, Wall.; large woody climber. Abundant. (C. 50).

Uvaria macrophylla, Roxb.; a large scandent or climbing shrub. This and the preceding are the two most common Uvarias in Penang. (C. 263, 842, 1312).

Uvaria purpurea, Bl.; large woody climber; found at low elevations only. (C. 234).

Uvaria hirsuta, Jack; long climber, petals red. Waterfall and Western Hill. (C. 1212).

Uvaria Curtisii, King; a long climber, fl. yellowish. Government Hill 2,000 feet, rare. (C. 1415).

Uvaria pauciovulata, Hk. fil. Government Hill. (C. 825).

Uvaria micrantha, Hk. fil. Not identified.

Uvaria sub-repanda, Wall.; scandent shrub. (C. 1408.)

(*Ellipeia nervosa*, Hk. fil.; for which Penang is given as a locality in the Materials for a Flora of the Malayan Peninsula was collected in Perak.)

Cyathocalyx Maingayi, Hk. fil.; a large tree, flowers greenish yellow, Telok Bahang. (C. 1035.)

Artobotrys suaveolens, Bl.; long climber. Common (C. 26-2234).

Drepananthus pruniferus, Maingay; small tree, 25-40 feet high; branches long, drooping. (C. 1417).

Canangium odoratum, Baill. Not truly wild in Penang. (C).

Unona Dunalii, Wall.; tree Muka Head. (C. 727).

Unona desmos, Dunal; a climber. West Hill and Batu Feringgi. (C. 807-1413).

Unona stenopetala, Hook. fil. King's collector, Scortechini.

Polyalthia clavigera, King; a tree 30-40 feet high; carpels yellow. Penara Bukit. (C. 2444).

Polyalthia macrophylla, Hook. fil.; a tree 30-40 feet high. Pulau Betong. (C. 2140).

Polyalthia cinnamomea, Hook. fil.; a tree 60 feet high; flowers dull red, principally on leafless branches. Not uncommon in the south of the island. (C. 2470).

Polyalthia oblonga, King; small tree. Common. (C. 1409-1277-1281).

Anaxagorea Scortechinii, King; a tree 30-40 feet high Government Hill. (C. 1054)

Goniothalamus Kunstleri, King; an erect growing shrub 6-8 feet high. West Hill. (C 1540).

Var. *macrantha*. Waterfall. (C. 1596).

Goniothalamus giganteus, Hook. fil.; a tree 40-50 feet, petals golden yellow. Waterfall. (C. 2162).

Goniothalamus macrophyllus, Hook. fil.; a shrub 6-8 feet high, scarcely at all branched. (C. 1577).

Goniothalamus tapis, Miq.; a large shrub. Government Hill 2,000-2,500 feet. (C. 302).

Mitrephora macrophylla, Oliver; a large shrub. (C. 813-1279).

Mitrephora Maingayi, Hook. fil.; a small tree. Not uncommon. (C. 157-1553).

Popowia ramosissima, Hook. fil.; a small tree. Collected Pulau Betong. Not distributed. (C.).

Popowia tomentosa, Maingay; a small tree. Government Hill, 2,000-2,500 feet. (C. 648).

Popowia nervifolia, Maingay; a small tree. (C. 893).

Oxymitra calycina, King; a woody climber. Government Hill 2,000 feet, rare. (C. 767).

Oxymitra glauca, Hook. fil. Not identified.

Melodorum manubriatum, Hook. fil. Collected by Maingay.

Melodorum latifolium, Hook. fil.; a large climber reaching to the top of tall trees. Common. (C. 1411-1196).

Melodorum lanuginosum, Hook. fil.; large woody climber. Government Hill 1,000-2,000 (C. 797-1195-1383).

Melodorum Maingayi, Hook. fil.; large climber. (C. 1046).

Melodorum prismaticum, Hook. fil.; Government Hill. (C. 730).

Melodorum rubiginosum var. *oblongum*, King. Waterfall (C. 143).

Melodorum elegans, Hook. fil.; Not seen. Wallich 6474*a*.

Melodorum pisocarpum, Hook. fil. Not seen.

Xylopia Curtisii, King; a tree 30 feet high. (C. 1569).

Xylopia elliptica, Maingay; a tree 25-30 feet high; petals yellowish white. Sungei Ujong. (C. 2482).

Xylopia stenopetala, Oliver; a tree 59-60 feet high. Government Hill 690 feet. (C. 857-880).

Phœanthus nutans, Hook. fil.; a small tree. Government Hill 2,000 feet. (C. 1416).

Phœanthus lucidus, Oliver; a small tree. Waterfall. Not uncommon. (C. 839-1407).

Alphonsea Curtisii, King; a scandent shrub. Muka Head. (C. 1410).

Mezzettia Curtisii, King; a tree 30-40 feet high; carpels about 2 in. in diam, (2266).

Undetermined sps. of Anonaceæ in Herb. Penang. (C. 2744,2745, 2775, 2768).

MENISPERMACEÆ.

Tinospora crispa Miers; climbing shrub. Waterfall. Not common. (C. 1231).

Tinomiscium petiolare, Miers; climber. Penara Bukit and Pulau Betong. (C. 208).

Fibraurea chloroleuca, Miers: large woody climber. Waterfall and West Hill. (C. 208).

Coscinium Blumeanum, Miers; large clmber; ripe drupes round, tomentose, $\frac{3}{4}$ in. (C. 8).

Limacia triandra, Miers; climbing shrub. Tanjong Bunga, near the beach. (C. 447).

Limacia oblonga, Miers; a climber. Government Hill. (C. 671).

Limacia velutina, Miers; a woody climber. At from 1,000-2,000 feet elevation. (C. 2296).

Hyserpa triflora, Miers, "Kelintek Nyamok." A slender climbing shrub. (C. 949-1558).

Pericampylus incanus, Miers; a slender climber. The most common plant of this order in Penang. (C. 122).

Stephania hernandifolia, Walp.; slender climber. Penara Bukit, 1,000 feet. (C. 1260).

NYMPHEACEÆ.

Nymphea stellata, Willd. "Klipoh." Common in ditches and paddy fields. (C. 518).

CRUCIFERÆ.

Cardamine hirsuta, L.; small annual herb found sparingly on the top of Government Hill. (C. 2156).

CAPPARIDEÆ.

Cleome viscosa, L.; annual herb 1-2 feet. Coast. (C. 1859).

Capparis Scortechinii, King; scandent shrub. I know of but one plant at Batu Feringgi. (C. 239).

Capparis micrantha, DC.; shrubby. Not common. (C. 1762).

VIOLACEÆ.

Viola serpens, Wall.; occurs sparingly on the top of Government Hill. (C.)

Alsodeia Wallichiana, Hk. fil.; erect shrub 3-5 feet; seen only at the Waterfall. (C. 1532-1899).

Alsodeia lanceolata, Wall.; small shrub, the only plant of the genus that is at all common. (C. 94-179).

Alsodeia lanceolata, var. *foliis latioribus* is a much larger plant than the type. (C. 75).

Alsodeia Kunstleriana, King; shrub about the same size as *A. Wallichianus*. Waterfall, Not common. (C. 1898).

Alsodeia echinocarpa, Korth, is mentioned in Dr. King's

Materials for the Flora of Malayan Peninsula as occurring in Penang but I have not seen it.

BIXINEÆ

Scolopia rhinanthera, Clos.; small tree. Government Hill. Not common. (C. 991).

Scolopia Roxburghii, Clos.; tree 20-30 feet. Government Hill. (C. 778).

Scolopia crenata, Clos.; large shrub, sometimes small tree. Not uncommon near the coast. (C. 706).

Flacourtia inermis, Rox., is said to have been collected in Penang by Jack. It is known to me as a cultivated tree only. (C.).

Flacourtia rukam, Zoll. & Moritz; a tree attaining a height of about 30 feet. Not uncommon. (C. 1566).

Flacourtia cataphracta, Rox., was collected on Government Hill by Kunstler. Not seen.

Hydnocarpus Curtisii, King; small tree. Batu Feringgi and Waterfall. (C. 800-1535).

Hydnocarpus nana, King; small tree. Telok Kumbar, rare. (C. 854).

Ryparosa Scortechinii, King; medium-sized tree, flowers from the stem. (C. 1741).

PITTOSPOREÆ.

Pittosporum ferrugineum, Ait., "Chabe hantu;" small tree, common about Batu Feringgi. (C. 453-1533).

POLYGALEÆ.

Polygala venenosa, Hassk.; shrub 2-3 feet. Not uncommon in damp shady places at about 2,000 feet. (C. 291).

Polygala brachystachya, Bl. Flowers yellow in open grassy places. (C.).

Trigoniastrum hypoleucum, Miq.; tree 30-40 feet with long slender branches. Government Hill. (C. 387).

Salomonia oblongifolia, DC.; dwarf herb, common in open grassy places. (C.).

Salomonia cantoniensis, Lour. Waterfall. (C. 1599).

Xanthophyllum affine, Korth.; tree not large; flowers open white, soon change to yellow. (C. 1188-2263).

Xanthophyllum Maingayii, Hook. fil.; small tree; flowers white. Government Hill, rare. (C. 1439).

Xanthophyllum eurhynchum, Miq.; tree. Telok Bahang near the coast. (C. 1552).

Xanthophyllum Wrayii, King; small tree. Balik Pulau. (C. 677).

Xanthophyllum pulchrum, King. Penara Bukit, rare. (C. 1167).

Xanthophyllum Kunstleri, King; medium-sized leafy tree 40 feet high. Government Hill. (C. 1590).

Xanthophyllum Curtisii, King; small tree; flowers yellowish white. Moniot's Road. (C. 1591).

Xanthophyllum Scortechinii, King; tree 25-30 feet, flowers pink; fruit globose 2½ in. Government Hill. (C. 2407).

Xanthophyllum, sps. undetermined. (C. 474 and 1486).

PORTULACEÆ.

Portulaca oleracea, L.; annual herb, sometimes used as a salad. Common. (C. 1650-1875).

Portulaca quadrifida, L.; small succulent herb. Collected in the Fort. (C. 2148).

HYPERICINEÆ.

Hypericum japonicum, Thunb.; dwarf herb with yellow flowers. Rice fields, south of the Island. Common. (C. 1946).

Cratoxylon arborescens, Bl. var. *Miquelii;* large tree, 60 ft. Government Hill 1,500-2,000 feet. Common. (C. 285).

Cratoxylon polyanthum, Korth. "Drum"; medium-sized tree. Not common. (C. 1168).

Cratoxylon polyanthum var. ligustrinum, Bl. (C. 824).

Cratoxylon formosum, Bth. & Hk.; tree about 30 feet; the most common of the genus. (C. 172-665).

Cratoxylon Maingayii, Dyer, is probably the plant in Herb. Penang (C. 2484).

GUTTIFERÆ.

Garcinia merguensis, Hook. fil.; small tree. Telok Bahang. Not uncommon. (C. 900-2408).

Garcinia eugeniæfolia, Wall.; small tree. Government Hill 1,500 feet. (C. 669).

Garcinia Scortechinii, King; tree 50-40 feet. Telok Bahang. Not common. (C. 1249).

Garcinia Hombroniana, Pierre; fruit much like a mangosteen but smaller. A common tree. (C. 690-2453).

Garcinia cornea, L. (C. 690 perhaps belongs to this species according to Dr. King).

Garcinia fascicularis, Wall.; small tree. Waterfall. (C. 840-1421).

Garcinia Penangiana, Pierre; small tree. Waterfall and Government Hill up to 1000 feet. (C. 1430-1549-1514).

Garcinia bancana, Miq.; small tree, seen only near the Coast. (C. 240).

Garcinia atro-viridis, Griff. "Asam Gelugur"; tall handsome tree; fruit yellow grooved, larger than mangosteen. Often cultivated. (C. 855).

Garcinia Griffithii, T. and ; small straight tree. (C. 1609).

Garcinia nigro-lineata, Pl.; tree 30-40 feet, branches slender; fruit 1-1½ inch yellow. (C. 1420-2478).

Garcinia Xanthochymus, Hook. fil. Not seen.

Garcinia, sps. undetermined and apparently distinct from any of the above. (C. 2293) (899-1424) 2412-1080 (691-1423) (2246) (1550).

Calophyllum spectabile, Willd. All the sps. of Calophyllum produce valuable timber known locally as "Bintangor." (C. 1153-1154).

Calophyllum canum, Hook. fil.; medium-sized tree. Government Hill. (C 1543).

Calophyllum pulcherrimum, Wall.; tall straight tree. (C. 418).

Calophyllum Kunstlerii, King; medium-sized tree. Common along the coast. (C. 1425).

Calophyllum Curtisii, King; 40-50 feet; fruit the size of a pea. Government Hill. Rare. (C. 523).

Calophyllum molle, King; small tree. Government Hill 1,000 feet. Not common. (C. 1426).

Calophyllum inophyllum, L. "Penaga"; medium-sized

tree; occurs sparingly along the sea shore. (C. 133).

Calophyllum sp. near *floribundum*; medium-sized tree. Government Hill 1,000 feet. (C. 830).

Kayea racemosa, Pl. and Trian.; tree 40-50 feet Government Hill, rare. (C. 1441).

Kayea Kunstlerii, King; small much branched tree Waterfall, etc., common. (C. 805, 1418, 1419).

Kayea and *nervosa*, T. And.; West Hill. (C. 748).

Mesua ferrea, L. "Matopus"; large tree, valuable timber. Muka Head and Government Hill. (C. 420).

TERNSTRŒMIACEÆ.

Ternstrœmia penangiana, Choisy; tree 30-50 feet; flowers yellowish white. Government Hill. (C. 905).

Ternstrœmia coriacea, Scheff.; medium-sized tree; bark grey, smooth. Government Hill. (C. 1055).

Adinandra dumosa, Jack. "Kayu Gula"; tree 20-30 feet, Common on abandoned land in secondary jungle. (C. 35,1725).

Adinandra acuminata, Korth.; small tree, does not occur below 1,006 feet. (C. 482).

Adinandra Miquelii, King. (C. 1612).

Adinandra integerrima, T. And. Not identified. Wallich Nos, 3663 and 7070.

Adinandra maculosa, T. And. Not identified.

Adinandra Hulletti, King. (C. 275, in part).

Adinandra villosa, Choisy; small tree 25 feet. Government Hill 2,000 feet, rare. (C. 2241).

Eurya acuminata, DC.; small tree 25-30 feet. Very common in places. (C.299).

Eurya japonica var nitida, Penang, Lobb in fil. Brit. Ind. is probably an error.

Saurauja tristyla, DC.; small tree. Government Hill, damp shady ravines. (C. 786).

Schima Noronhæ, Reinw. "Medang Bequoi"; medium sized tree; wood soft. Moderately common all over the island. (C. 161, 166).

Pyrenaria acuminata, Planch. is said to occur in Penang. Not seen.

Gordonia excelsa, Bl.; tall tree; flowers large yellow. Government Hill, rare. (C. 834).

Gordonia sp.; tree 20-30 feet. Top of Government Hill. (C. 2281).

Gordonia anomala, Spring, is a doubtful Penang plant stated to have been sent to Calcutta from Penang. It is a native of China.

Archytæa Vahlii, Choisy; shrub 6-10 feet; flowers pink. Batu Feringgi, not seen elsewhere. (C. 1069).

DIPTEROCARPEÆ.

Dipterocarpus grandiflorus, Blanco; "Kayu minyak"; a large tree which yields an useful oil. (C. 424).

Dipterocarpus cornutus, Dyer; large tree 70-80 feet high. Waterfall, not common. (C. 1402).

Dipterocarpus fagineus, Vesque; "Kruen"; a large tall tree yields oil; moderately common on Government Hill up to 1,000 feet. (C. 1401).

Dipterocarpus, sp.; much resembling the preceding and scarcely distinguishable when not in fruit. Government Hill. (C. 1560).

Dipterocarpus Kerrii, King; a large tall tree closely resembling the species named after Dr. KERR, but in the absence of flowers there is some doubt. Waterfall, not common. (C. 1653). Typical *D. Kerrii* was collected on Gunong Tunggal in the Dindings and the local name is "Kruen chaia." (C. 1561).

Dipterocarpus Skinnerii, King; an exceedingly rare species named in honour of the Resident Councillor of Penang. A tree about 70 feet high, bark rough, warty. West Hill 1,500 feet, only one tree seen. (C. 1403).

Ancistrocladus extensus, Wall. var. *pinangianus*; a large woody climber, abundant in places. (C. 774).

Anisoptera Curtisii, Dyer. "Rengkon"; large tree, pretty common on Government Hill up to 2,000 feet. (C. 428).

Vatica pallida, Dyer; small tree, branches slender, drooping. Common on the lower slopes of the hills and one of the few Dipterocarps that flowers annually. (C. 117).

Vatica Curtisii, King: medium-sized tree, fruit in young state brick red. Waterfall, not common. (C. 1579).

Vatica nitens, King; middling-sized tree, not common. Telok Bahang. (C. 1404).

Vatica Wallichii, Dyer, "Ressak" small tree, bark smooth grey, Abundant. (C. 1218 1161 1391).

Shorea glauca, King, "Damar laut daun besar"; large tree wood hard and durable, one of the best forms of timber that are locally known as "Damar laut." (C. 372).

Shorea sericea, Dyer, "Seraya"; large tree, wood easily worked and used for a variety of purposes. Not common in Penang. (C. 431).

Shorea Curtisii, Dyer; "Meranti tai"; tree 60-80 feet high, leaves silvery grey, wood soft but much used for indoor work. More or less common all over the island. (C. 427-1394-1395).

Shorea ciliata, King; medium-sized tree, wood hard, durable. Government Hill, rare. (C. 1578).

Shorea utilis, King, "Damar laut No. satu"; large tree, wood hard and close grained. Undoubtedly the best timber in the island. Waterfall and Muka Head, too much in demand to be common. (C. 423).

Shorea puaciflora, King; medium-sized tree. Government Hill. (C. 1527).

Shorea parvifolia, Dyer, "Meranti daun kechil"; tall straight tree, bark rough deeply grooved. Abundant. (C. 201).

Shorea, sp. near *parvifolia* but with smaller fruit and probably a distinct species. West Hill 2,000 feet. (C 437).

Shorea costata, King, "Damar laut"; large tree. Government Hill, rare. (199).

Shorea bracteata, Dyer, "Semah" tall straight tree. Waterfall, not common. (C. 1405).

Shorea macroptera, Dyer, tree 50-60 feet high. Government Hill, (C. 1392).

Hopea intermedia, King. "Jankang"; medium-sized tree, not uncommon. (C. 425-1397).

Hopea micrantha, Hook fil.; medium-sized rather tall tree much like the preceding. Government Hill. (C. 266).

Hopea Curtissii, King; large straight tree 60-80 feet high; immature fruit greenish yellow. Waterfall. (C. 1562).

Balanocarpus pinangianus, King. "Damar itam"; large tree. Government Hill, &c., common. (C. 1, 429, 1393).

Balanocarpus Curtisii, King; small tree 15-30 feet high, bark smooth, polished. Waterfall, abundant in two places. (C. 1406).

MALVACEÆ.

Sida carpinifolia, L. "Katombe." A shrub 1-2 feet high flowers yellow. Common. (C. 946, 1894).

Sida rhombæfolia, L. Not uncommon. (C.).

Urena lobata, L. "Pulut"; very common. (C. 3).

Abutilon indicum, G. Don; dwarf shrub. Open places near the coast. (C. 127).

Hibiscus surattensis, L.; climber. Not common. (C. 70).

Hibiscus abelmoschus, L.; undershrub with large yellow conspicuous flowers. Open places not common. (C. 1925).

Hibiscus macropyhllus, Rox. Recorded from Penang with no collector's name in Fl. Brit. Ind. probably an error. Not collected by me.

Hibiscus tiliaceus, L.; littoral tree, 30-40 feet high. Common. (C. 274).

Thespesia populnea, Corr. "Baru"; a tree 20-30 feet. Not common. (C. 1715).

Eriodendron anfractuosum, D.C. A tall tree found in many native gardens, but not truly wild in Penang. (C.)

Durio zibethinus, L. "Durian"; cultivated, and often found in a half wild state on abandoned land. (C.).

Durio testudinarum, var. penangianus, Beccari; a tall straight tree; flowers and fruit from the stem, generally within a few inches of the ground. Fruit round, the size of a large orange. West Hill 2,500 feet. (C. 293).

Boschia Griffithii, Mast.; a tree 30-40 feet; fruit bright red. Telok Bahang. (C. 381).

Neesia synandra, Mast. Penang, Maingay. Not since collected here.

STERCULIACEÆ.

Stercuia parvifo ia, Wall,; small tree 15-20 feet. Government Hill. (C. 526).

Sterculia lævis, Wall.; small tree. Government Hill. (C. 1624).

Sterculia rubiginosa, Vent.; tree 15-20 feet. Penara Bukit. Not common. (C. 1195-2471).

Stercu ia ensifolia, Mast.; shrub 6-10 feet flowers dull red. Waterfall. (C. 272, 1428, 2299).

Sterculia parviflora, Roxb.; medium-sized tree 20-30 feet, conspicuous when in fruit. Not common. (C. 770-1429).

Sterculia colorata, Roxb.; small tree. Government Hill, rare. (C. 144).

Sterculia hyposticta, Miq.; large shrub. Government Hill, (C.)

Sterculia macrophylla, Vent.; tree 30-40 feet. Waterfall, rare. (C. 3008).

Sterculia, sp. large tree. Waterfall. (C. 2762).

Sterculia campanuata, Wall. large tree, deciduous; fruit white. Bukit Pulai. (C.2783).

Tarrietia perakensis, King; tree 40-60 feet high. Government Hill 2,400 feet. (C. 2229).

Tarrietia Curtisii, King; leafy spreading tree 30-40 feet; leaves digitate; samara almost black 1,000-2,000 feet. (C. 1427).

Heriteria littoralis, Dryand, "Dungun"; medium sized tree. Tidal swamps, common. (C. 517.)

Helicteres isora, L.; small tree. Government Hill. (C. 1012).

Helicteres hirsuta, Lour. *var. oblonga.* Wallich No. 1183. George Porter. (C).

Pterspermum Jackanum, Wall.; tall straight tree. Waterfall, not uncommon, (C. 783).

Pterospermum Blumeanum, Korth.; small tree. Balik Pulau. (C. 2772).

Melocha corchorifola, L.; common undershrub. (C. 413).

Buettneria Jackiana, Wall.; climbing shrub. (C. 86).

Buettneria Curtisii, Oliv.; climbing shrub, flowers white,

Batu Feringgi and Telok Bahang. (C. 817-1166).

Commersonia platyphylla, And.; tree 30-40 feet; fl. white. Waterfall, not common. (C. 776).

Leptonychia glabra, Turcz.; erect shrub 6-10 feet. Common. (C. 38, 407).

TILIACEÆ.

Corchorus olitorius, L. Telok Bahang. (C. 2483).

Pentace Curtisii, King; large tree; flowers white. Waterfall. (C. 1573).

Pentace, sp.; small tree, flowers much smaller than those of *P. Curtisii*, Penara Bukit. (C. 3006).

Schoutenia accrescens, Mast.; tree 50-60 feet; calyx papery, yellowish white. Waterfall. (C. 1520).

Grewia umbellata, Rox.; scandent shrub. Common. (C. 444·714).

Grewia fibrocarpa, Mast.; small tree; drupe pyriform, yellow. Government Hill. (C. 522-1712).

Grewia globulifera, Mast.; medium-sized tree. Penara Bukit. (C. 2414).

Grewia laurifolia, Hk. fil.; small tree. Government Hill 500 feet (C. 183, 1488).

Grewia paniculata, Roxb. "Chindrie"; small tree 15-30 feet high; ripe drupes the size of a pea, black edible. (C. 108).

Triumfetta rhomboidea, Jacq.; undershrub 2-3 feet high Coast. (C. 484, 2141).

Elæocarpus Ganitrus, Roxb.; tree 30-40 feet; Penara Bukit, not common. (C. 775).

Elæocarpus parvifolius, Wall.; tree 25-30 feet not uncommon at 2,000-2,500 feet on Government Hill. (C. 310, 376).

Elæocarpus stipularis, Bl.; not seen.

Elæocarpus nitidus, Jack; small tree. Waterfall (C. 282-463).

Elæocarpus robustus, Roxb.; large tree. Telok Bahang. (C. 1,049).

Elæocarpus glabrescens, Mast.; middling sized tree. Government Hill. (C. 1,092).

Elæocarpus Griffithii, Mast.; not seen. King's collector.

Elæocarpus pedunculata, Wall.; small tree, rather common and conspicuous when in flower. (C. 256).

Elæocarpus apiculatus, Mast. Collected by Wallich No. 3969.

Elæocarpus petiolatus, Wall.; tree 25-30 feet. Waterfall, not uncommon. (C. 383, 464).

Elæocarpus Hullettii, King; small tree. (C. 1,091).

Elæocarpus Jackiana, Wall.; tree. (C. 465).

LINEÆ.

Roucheria Griffithiana, P. C.; large climbing shrub, flower yellow. (C. 165, 207).

Erythroxylon burmanicum, Griff. "Chinta mula"; tree 25-30 feet, fruit red. Waterfall (C.).

Ixonanthes icosandra, Jack. Wallich No. 4409 and 4802. (C. 717).

Ixonanthes obovata, Hook. fil.; not seen.

Ixonanthes reticulata, Jack; medium-sized tree. Government Hill. (C. 978).

MALPIGHIACEÆ.

Brachylophon Curtisii, Oliv.; erect shrub 3-5 feet, fl. yellow. Not uncommon along the Coast. (C. 231).

Hiptage madablota, Gærtn.; climbing shrub. (C. 1159-1561).

Hiptage sericea, Hk. fil. Wallich 1814. Balik Pulau. (C. 1525).

Aspidopterys concava, A. Juss.; flexuous climber. Government Hill 1,000 feet. (C. 138-798).

Aspidopterys, sp.; climber. Telok Bahang. (C. 195).

GERANIACEÆ.

Oxalis corniculata, L.; common creeping weed with yellow flowers. (C. 1836).

Oxalis Martiana, Zucc.; herb common on Government Hill. Introduced. (C. 1726).

Biophytum sensitivum, D.C.; herb 6-10 in. petals yellow; not common. (C. 2144).

Hydrocera triflora, W. & A. Paddy fields and ditches. (C. 1190).

RUTACEÆ.

Evodia Roxburghiana, Benth. Not seen. Collected by Wallich No. 8065.

Evodia robusta, Hook. fil.; large shrub. Government Hill. (C. 1485).

Evodia latiflia, D.C.; small tree. Pulau Betong. (C. 731-939).

Evodia glabra, Bl. Tree 40-50 feet. Waterfall. (C. 2428),

Tetractomia Roxburghii, Hk. F.; tree 20-30 feet; fl. white. Government Hill, not uncommon. (C. 281).

Xanthoxylum myriacanthum, Wall.; tree 25-30 feet; stem covered with prickles, rare. (C. 1,076).

Acronychia laurifolia, Bl.; tree 20-30 feet (C. 315, 374, 694).

Acronychia Porteri, Hk. fil.; a smaller and much less common tree than the preceeding. (C. 1,140, 1,162).

Glycosmis pentaphylla, Correa; small shrub, fruit round white $\frac{1}{4}$ inch in diameter, a very variable plant. (C. 89).

Glycosmis sapindoides, Lind.; small shrub. Government Hill, not uncommon. (C. 722).

Glycosmis puberula, Lind.; small tree. Government Hill, not uncommon. (C. 88, 1,223).

Micromelum pubescens, Bl. (C. 1,760).

Micromelum hirsutum, Oliv.; shrub. Ayer Hitam. (C. 1436).

Clausena excavata, Burm.; "Chenamah" small tree 10-20 feet. Common near the Coast. (C. 150).

Paramignya Griffithii, Hk. fil.; Wallich No. 6,358. Penang. G. Porter is the only authority for this, which was probably not collected here.

Paramignya monophylla, Wight.; large climbing shrub with axillary spines 1 inch long; fruit (unripe) $\frac{1}{2}$-$\frac{3}{4}$ inch long. Waterfall. (C. 2,207).

Atalantia Roxburghiana, Hk. fil.; "A native of Pulo Pinang" Roxburgh. A very little known plant. Not identified.

Atalantia monophylla, Corr.; small tree; not uncommon. (C. 467).

SIMARUBEÆ.

Ailantus malabarica, D. C.; tall tree, conspicuous when in

young fruit. Waterfall. (C. 710).

Eurycoma longifolia, Jack.; "Tongkat barinda" small tree, common. (C. 141).

Eurycoma apiculata, A. W. B.; small tree 6-10 feet high. Waterfall. (C. 2,763).

OCHNACEÆ.

Gomphia sumatrana, Jack; "Jangot Klee," small tree; petals yellow. Not uncommon near the Court. (C. 221).

Gomphia Hookerii, Planch, larger than the preceeding; fruit bright red. Government Hill. (C. 1147, 2154).

Euthemis leucocarpa, Jack; small erect shrub; berries white (C. 1768).

Euthemis minor, Jack. Not seen.

BURSERACEÆ.

Canarium commune, L. The only tree known to me in Penang is cultivated. (C.).

Canarium nitidum, Benn.; small tree. Ayer Hitam (C. 495).

Canarium grandiflorum, Benn.; small tree. Government Hill (C. 803, 959).

Canarium, sp.; tree 30 ft.; fruit ovate, 1 in long. Muka Head and Government Hill. (C. 1432, 1433).

Canarium purpurascens, Benn.; small tree. Government Hill 1200 ft. (C. 862).

Canarium hirtellum, Benn.; small tree. Government Hill (C. 656).

Canarium laxum, Benn.; tree 30-40 ft. Government Hill (C. 1431).

Canarium, sp.; small tree. West Hill. (C. 1544).

Canarium pilosum, Benn.?; tree 30-40 ft. (2251).

Canarium rugosum, Miq.; tree 20-30 ft. Muka Head. (C. 1434).

MELIACEÆ.

Melia tomentosa, Rox. Not identified. A drawing of this at Kew and Roxburgh's description are all that are known of it. Roxburgh says "a native of Pulo Pinang where it

grows into a large tree" and gives Malay name Barang bahee possible an error for Berangan babi.

Melia excelsa, Jack. Not identified, collected by Jack only here.

Dysoxylum cauliflorum, Hiern; tree 30-40 feet, flowers white, often from old wood. Government Hill. (C. 204).

Dysoxylum cuneatum. Hiern; small tree. West Hill. (C. 1045).

Dysoxylum, sp.; near *binectariferum*, tree 30-40 feet; fruit pink, 2-3 in. Government Hill. (C. 2437).

Chisocheton spicatus, Hiern; small tree. Not common. (C. 655).

Chisocheton penduliflorus, Bl.; small tree 10-15 feet with a stem 2 in. diam. Government Hill. (C. 460).

Chisocheton divergens, Bl.; small tree. Pulau Betong, rare. (C. 892).

Chisocheton glomeratus, Hiern. Collected by Porter (Wall Cat. 9040).

Chisocheton, sp.: small tree, racemes 20-24 in., pendulous; capsules 1 in., bright pink. (C. 2295).

Chisocheton princeps, Hemsley; tree 40 feet. Waterfall. (C. 1519).

Chisocheton, sp; tree 60 feet; leaves 5-6 feet; panicles as long as the leaves; fl. dirty white. Pulau Betong. (C. 2269).

Chisocheton, sp.; tree 60-70 feet; capsule $1\frac{1}{2}$-$1\frac{3}{4}$ in.; flesh colored, 1-2 seeded; arillus bright red. (C. 2467-2468).

Sandoricum indicum, Cov., "Sentol" large tree, cultivated; doubtful if indigenous in Penang. (C.).

Aglaia odorata, Lour. is not wild in Penang. (C.).

Aglaia tenuiecaulis, Hiern; small tree with a stem 2-3 in. diam. Government Hill. (C. 747).

Aglaia minutiflora, Bedd.; small tree; branches slender, drooping. Not uncommon. (C. 894-961).

Aglaia minutiflora, var. *Griffithii*. (C. 2003).

Aglaia palembanica, Miq. Government Hill. (C. 768).

Aglaia, sp. aff. *paniculata*, King. Small tree. (C. 895-896.

Aglaia, sp.; spreading tree 30-40 feet; fruit pyriform, silvery grey. Waterfall. (C. 2287).

Aglaia, sp. small tree; fruit ovate, brown. (2448).

Lansium domesticum, Jack. is cultivated, not wild. (C.)

Amoora rohituka, W. & A; small tree. Not common. (C. 969).

Heynea trijuga, Rox.: large tree. Penara Bukit. (C. 676).

Carapa moluccensis, Lam.; "Nireh" small tree. Common in swamps. (G. 515, 742).

Cedrela Toona, Rox.; one very large tree on the top of Government Hill, probably planted there. (C. 826).

Meliacea? small tree. Moniot's Road 2,000 feet (C. 1,690).

CHAILLETIACEÆ.

Chailletia Laurocerasus, Pl.; scandent or climbing shrub, common on Government Hill. (C. 152).

Chailletia, sp. Wall. Cat., 7443 referred to in Fl. B. Ind. I have not seen; there appears but the one species in Penang.

OLACINEÆ.

Ximenia americana, Will.; large shrub. Bata Feringgi, in damp places. (C. 1572).

Erythropalum scandens, Bl.; climbing shrub. Waterfall. (C. 2777).

Ochanostachys amentacea, Mast.; tree 50 feet, fruit globular 2-2½ inch, Government Hill. (C. 1500).

Ctenolophon grandifolius, Oliv.; large tree; flower reddish, fragrant. Muka Head, rare. (C. 721).

Strombosia javanica, Bl. not met with.

Strombosia, sp.; not the preceeding. (C. 859).

Lasianthera malaccensis, Mast.; small tree (C. 912, 957).

Gomphandra penangiana, Wall.; small tree 10-15 feet. (C. 1225).

Gomphandra, sp. shrub 2-4 feet; leaves ¼ + 4-5 inch. West Hill 2,500 feet. (C. 1,265, 737).

Pteleocarpa malaccensis, Oliv.; tall tree; flower yellow, very showy when in bloom, not uncommon. (C. 835, 1,494).

Phytocrene bracteata, Wall.; large climber. Balik Pulau. C. 1754).

Phytocrene oblonga, Wall. Not seen. Porter collected it.

Phytocrene palmata, Wall. Much more common than *Ph. bracteata*. Government Hill, &c. (C. 2327).

Iodes olbonga, Pl.; long slender flexuous climber; flower white. Waterfall. Not common. (C. 2 438).

Platea latifolia, Bl.? tree 30-40 feet; fruit pear-shaped, yellow, 1 inch long. Near the waterfall. (C. 2,421).

ILICINEÆ.

Ilex macrophylla, Wall. "Medang tulok"; tree 25-30 feet. Common in all parts of the Island. (C. 290, 379, 304).

Ilex Maingayii, Hk. fil.; tree 20-25 feet. Top of Government Hill, rare. (C. 2152).

Ilex cymosa, Bl.; small tall tree. Batu Feringgi. (C. 1036).

CELASTRINEÆ.

Eunonymus javanicus, Bl.; small tree. Not uncommon. (C. 736).

Micropteris bivalvis, Wall.; small tree. Government Hill 2,000-2,500 feet. (C. 651, 652, 1025, 1727).

Micropteris, sp.; large shrub. Moniot's Road. (C. 345, 1531).

Micropteris, sp.; small tree. West Hill. (C. 968).

Lophopetalum pallidum, Laws.; medium sized tree (C. 1577).

Lophopetalum reflexum, Laws.?; tree 40-50 feet. (C. 1502).

Lophopetalum, sp.; tree. Government Hill. (C.1501).

Lophopetalum, sp.; tree about 40 feet. Government Hill 2,000 feet. (C. 1576).

Celastrus monosperma, Wall.; large climbing shrub. Government Hill. (C. 404).

Kurrimia pulcherrima, Wall.; tree 30-40 ft. (C. 1064, 1106).

Kurrimia paniculata, Wall.; medium-sized tree 30-40 ft. Government Hill. (C. 307).

Hippocratea, sp.; small tree. West Hill, rare. (C. 175).

Salacia flavescens, Kurz; large scandent shrub. Government Hill. (C. 12).

Salacia longifolia, Hook. f.; small tree 20 ft. Government Hill, not uncommon. (C. 134, 1266).

Salacia grandiflora, Kurz; large scandent shrub. Government Hill. (C. 151).

Salacia grandiflora, variety?; a much smaller plant. (C. 249, 1737).

Salacia oblonga, Wall.? scandent shrub; fruit green, the size of a small orange. (C. 693).

Salacia Griffithii, Laws.? (C. 692).

Salacia sp.; scandent shrub. West Hill. (C. 1704).

Siphonodon celastrineus, Griff. not identified.

RHAMNEÆ.

Ventilago leiocarpa, Benth.; large climbing shrub. (C. 311, 1751).

Zizyphus Ænoplia, Mill.; large shrub. (C. 107).

Zizyphus calophylla, Wall.; large climbing shrub. Not uncommon. (C. 119).

Colubrina asiatica, Brongn. "Prea Pantie;" a common coast plant. (C. 236).

AMPELIDEÆ.

Cissus quadrangularis, L.; is cultivated, the leaves and shoots being used in curries. Not seen in a wild state. (C.)

Cissus hastata. Planch. Not seen. Porter.

Cissus glaberrima, Wall. Not common. (C. 1138).

Cissus repens, Lamk. Penara Bukit, not common. (1135.)

Cissus adnata, Roxb. Not seen.

Cissus carnosa, Lam. Common. (C. 187).

Cissus angustifolia, Wall.; fl. sweet scented, retaining their perfume long after being dried. (C. 1137).

Cissus mollissima, Wall. Muka Head. (C. 1435).

Ampelocissus thyrsiflora, Planch. (C. 3122).

Ampelocissus cinnamomea, Wall. (C. 47).

Ampelocissus compositifolia, Planch. Not identified. Penang, collected by Philips.

Ampelocissus nitida, Planch. Not identified. Wallich.

Ampelocissus polystachya, Planch. Collected by Walker.

Tetrastigma peduncularis, Wall. Not seen. Wallich No. 6024.

Tetrastigma lanceolarium, Planch. Government Hill 685.

Tetrastigma pedata, Vahl. Not identified. Lawson gives it for Penang in Flor. Brit. Ind. but with no collector's name.

Cissus, sp.; undetermined in herb. Penang. (C. 1051, 1241, 1245).

Pterisanthes araneosa, Miq.; leaves simple, cordatei toothed. (C. 168).

Pterisanthes, sp.; leaves trifoliate, leaflets lanceolate, ½ in. broad. Government Hill. (C. 761).

Leea rubra, Bl.; small erect shrub. Penara Bukit, rare. (C. 1107).

Leea sambucina, Willd.; erect shrub 6-10 feet. Very common. (C. 96).

SAPINDACEÆ.

Cardiospermum halicacabum, L.; annual climbing weed. Not common. (C. 349).

Erioglossum edule, Bl.; tree 20-30 feet; ripe fruit almost back. (C. 701).

Allophyllus Cobbe, Bl.; small tree. Government Hill, not uncommon. (C. 340, 771, 1264).

Mischocarpus fuscescens, Bl.; small tree. Government Hill (C. 1243).

Cupania glabrata, Kurz., tree 30-40 feet. Top of Government Hill. (C. 1041).

Cupania pleuropteris, Bl.; small tree. (C. 646).

Var. bijuga, tree 20-40 feet (C. 789, 1158).

Cupania Lessertiana, Camb.; tree, small on the coast, larger on the Hill. (C.227, 288).

Lepisanthes cuneata, Hiern. Not identified. Penang. Porter.

Otophora paucijuga, Hiern,; small tree. Government Hill. (C. 1164).

Xerospermum Noronhianum, Bl.; small tree. (C. 846, 1232, 2285).

Nephelium, sp.; large tree. Government Hill: (C. 1575).

Pometia tomentosa, Kurz.; large spreading tree, 50 feet high. (C. 888).

Dodonæa viscosa, L. Telok Bahang. (C. 2847).

Turpinia sphærocarpa, Hassk.; tree 40-50 feet. Government Hill 2000 feet. (C. 1033, 1717).

Sapindaceæ; small tree; leaves pinnate. (C. 1600).

SABIACEÆ.

Sabia limoniacea, Wall.; climbing shrub. Sungei Penang. (C. 1221).

Meliosma lancifolia, Hook fil.; small tree. Government Hill, rare. (C. 1215).

ANACARDIACEÆ.

Mangifera quadrifida, Jack. Not identified.

Mangifera fœtida, Lour. "Bachang"; large tree common in orchards, often on abandoned land, but not truly wild. (C. 1747).

Mangifera, sp.; large tree; leaves 12-15 in. by 3-4 in.; fruit round, about 3 in. Government Hill. (C. 1598).

Mangifera, sp.; small tree; fruit not seen. (C. 1496).

Mangifera, sp.; tree 25-30 ft. fruit ovate, brown, 3 X 2½ in. long. Telok Bahang, rare. (C.)

Mangifera, sp.; tree 30-40 ft.; fruit. globular 1½-2 in. Telok Bahang. (C. 2306).

Anacardium occidentale, L. quite common in sandy places near the coast. (Introduced) (C.)

Bouea microphylla, Griff. "Rumania;" compact growing tree 20-40 ft. Waterfall and Government Hill. (C. 223).

Bouea macrophylla, Griff. is cultivated not wild in Penang. (C.)

Gluta elegans, Wall; small tree; drupes 1-1½ in. long; calyx red, petals white. Common. (C. 153, 1062).

Buchanania lucida, Bl.; tree 20-40 ft. Government Hill. (C. 319, 696).

Buchanania acuminata, Turcz.; medium sized tree. (C. 154).

Melanorrhœa Curtisii, Oliv. "Rengas;" large tree, heartwood dark red, juice poisonous. (C. 242, 433).

Swintonia Griffithii, Kurz; large tall tree. Waterfall. (C. 1579).

Swintonia spicifera, Hk. f. "Moopoo;" large tree, abundant in one or two places. (C. 371).

Odina wodier, Roxb.; I have seen but a single tree which may have been introduced. (C. 1499).

Parishia Maingayii, Hk. f.; small tree; young fruit full of white milky juice. Waterfall. (C. 2264).

Campnosperma Griffithii, March.; tree 50-60 ft.; leaves of young plants 2-3 times larger than in adult trees. Government Hill. (C. 1037).

Spondias mangifera, Willd. "Kadongdong"; often met with on abandoned land: not truly wild. (C. 752).

Dracontomelum mangiferum, Bl. Not met with. Collected by Maingay perhaps from a cultivated tree.

Anacardiaceæ, L.: tree 60 feet; bark rough, juice black, resinous. (C. 1567).

Anacardiaceæ, L.; tree 40-50 feet; drupe 1-½ in. Government Hill. (C. 2475).

CONNARACEÆ.

Agelæa vestita, Hk. F.; large scandent shrub. Telok Bahang. Not common. (C. 1556).

Rourea rugosa, Pl.; scandent shrub. Government Hill. (C. 191).

Rourea similis, Bl. Government Hill, near the chalet. (C. 473).

Roureopsis pubinervis, Hook. fil.; collected by Porter. (Wall Cat 9050). Batu Ferengy. (C. 2749).

Connarus ferrugineus, Jack. Not seen.

Connarus semidecandrus, Jack. Not seen. Philips, Wallich.

Connarus gibbosus, Wall.; tree. Telok Bahang. (C. 1151 2899).

Connarus grandis, Jack; small tree. Telok Bahang. (C. 27).

Connarus oligophyllus, Pl. Not identified. Porter.

Cnestis ramiflora, Griff.; climbing shrub. (C. 145-1157).

Ellipanthus Griffithii, Hk. F.; small tree. Government Hil near the chalet. (1014-1097).

LEGUMINOSEÆ.

Crotolaria retusa, L.; undershrub. coast. (C. 109).

Crotolaria striata, D.C. is very common. (C.)

Millettia sericea, W. & A.; large climbing shrub; pod almost black, velvety. Penara Bukit. (C. 844).

Millettia eriantha, Benth.; climbing shrub. Telok Bahang, not common. (C. 338).

Millettia atropurpurea, Benth.; tree 30-40 ft. attaining a moderate size. Not uncommon. (C. 182).

Millettia, sp.; climbing shrub. Penara Bukit. (C. 1190).

Millettia, sp.; tree. Telok Bahang. (C. 1160).

Tephrosia Hookeriana, W. and A.; undershrub 4-6 ft. (C. 1878).

Tephrosia purpurea, Pers.; Undershrub 2-4 ft. (C. 1895).

Uraria crinita, Desv.; shrubby perennial; flowers lavender. (C. 916).

Alysicarpus vaginalis, D.C. is common in open grassy places, especially at the Waterfall. (C. 1893).

Desmodium umbellatum, D.C.; shrub 6-10 ft.; corolla white. Telok Bahang on the beach. (C. 1082).

Desmodium polycarpum, D.C.; shrub 2-3 ft. Ayer Hitam. (C. 392, 459).

Desmodium triflorum, D.C. Waterfall, common. (C. 1842).

Desmodium heterophyllum, D.C. not seen.

Abrus precatorius, L.; slender climber, very common. (C. 41).

Mucuna acuminata, Graham. not seen.

Erythrina indica, Lam. "Dadap;" is commonly planted, but not truly wild in Penang. (C.)

Spatholobus Roxburghii, Benth. var. *denudatus*. Not seen.

Spatholobus gyrocarpus, Benth.; large woody climber. Government Hill. (C. 271).

Spatholobus acuminatus, Benth. Probably not a native.

Spatholobus crassifolius, Benth. "Penang 1822. Wallich." Doubtless an error. It is a native of North India.

Dioclea reflexa, Hook. fil. not seen. "Penang or Singapore" Wallich. Probably not native.

Pueraria phaseoloides, Benth. Not identified.

Pachyrhizus angulatus, Rich. is cultivated. (C.).

Cajanus indicus, Spreng. Introduced. ? (C. 118).

Flemingia congesta, Roxb. ; shrub 2-4 feet. Not uncommon. (C. 87, 1926).

Dalbergia Championi, Thwaites ? ; large woody climber. Government Hill. (C. 1572).

Dalbergia tamarindifolia, Roxb. ; large woody climber. Waterfall. (C. 1492).

Dalbergia monosperma, Dalz. ; climbing shrub. Telok Bahang. (C. 220).

Dalbergia, sp. ; climbing shrub ; pod 2-3 inches long. Ayer Hitam. (C. 1437).

Pterocarpus indicus, Willd. ; is the principal shade tree planted in Penang. Not wild. (C.).

Pongamia glabra, Vent. ; tree 30-40 feet. Not uncommon along the Coast. (C. 382).

Derris scandens, Benth. ; climbing shrub. Common on the banks of tidal rivers. (C. 279).

Derris uliginosa, Benth. ; climbing shrub. (C. 918).

Derris elliptica, Benth. "Akar tubah" ; cultivated root used as an insecticide and for poisoning fish. Not seen in a wild state. (C. 1438).

Derris thyrsiflora, Benth. ; robust climber. (C. 248, 802).

Derris, sp. ; large climbing shrub, not referable to any of the above. Waterfall. (C.)

Cœsalpinia Bonducella, Flem. ; straggling shrub. Tanjong Bunga. (C. 99).

Cœsalpinia sepiaria, Roxb. ; climbing prickly shrub. Top of Government Hill. (C. 385).

Cœsalpinia digyna, Rottb. Tanjong Bunga. (C. 448).

Peltophorum ferrugineum, Benth. ; tree 25-30 feet ; corolla yellow. A coast plant. (C. 370).

Cassia occidentalis, L. ; dwarf undershrub, common. (C. 131).

Cassia sophora, L ; not identified.

Cassia siamea, Lam. ; small tree. (C. 92).

Cassia mimosoides, L. ; perennial 6-18 in. ; corolla yellow. common on Government Hill. (C. 829).

Cassia Kleinii, W. & A.; shrubby 2 feet. Government Hill. (C.).

Cassia javanica, L.; tree 30-40 feet. Waterfall. (C. 1576).

Cynometra polyandra, Roxb. is quoted from Penang and Malacca in the Flora of British India without any collector's name. Wallich and Roxburgh only got it in Khasiya and Silhet.

Cynometra cauliflora, L. "Nam-nam"; is cultivated; not seen wild. (C.)

Sindora Wallichii, Benth.; large tree; timber much valued. Not common. (C. 430).

Dialium Maingayii, Baker. "Kranji"; large tree, fruit sometimes eaten. (C. 440).

Saraca triandra, Baker; small tree. Government Hill, not common. (C. 163-647).

Bauhinia tomentosa, L. Penang, in the Fl. Brit. Ind. with no collector's name. It is certainly not wild in the peninsula.

Bauhinia cornifolia, Baker; climbing shrub. Government Hill. (C. 295).

Bauhinia emarginata, Jack; collected by Porter.

Bauhinia integrifolia, Roxb.; large woody climber; far more common than any of the other sps. (C. 300-500).

Bauhinia bidentala, Jack; petals orange; handsome plant when in flower. Government Hill. (C. 136).

Bauhinia, sp. near *bidentata*. Top of Government Hill. (C. 488).

Bauhinia elongata, Korth. Not identified. Collected by Porter. (Wallich 5782).

Bauhinia glauca, Wall. Not identified.

Bauhinia ferruginea, Roxb, var. *Griffithiana*. (C. 784). var *excelsa*. (C. 211).

Bauhinia purpurea, L. is cultivated, not wild I think. (C.).

Bauhinia lucida, Wall. is only known from leaf specimens of a plant collected at Calcutta said to have come from Penang. (No. 5779*b*).

Bauhinia, sps. undetermined. (C. 801,1541).

Neptunia oleracea, Lour.; floating herb; fl. yellow. Not common. (C.).

Entada scandens, Benth.; large climber. Government Hill. (C. 115).

Adenanthera pavonina, L. is often found growing near villages, but never in the forest. (C.).

Parkia biglandulosa, W. & A. is commonly cultivated. (C.).

Leucœna glauca, Benth.; large shrub. Waterfall. (C. 49).

Mimosa pudica, L. is one of the pests of the island. (C.).

Acacia Farnesiana, Willd. Not uncommon, but a doubtful native (C.).

Acacia pennata, Willd. var. *pluricapitata*; not seen.

Albizzia lebbek, Benth.; tall tree. Telok Bahang. (C. 206).

Albizzia myriophylla, Benth.; small tree. (C. 788-1702).

Albizzia, sp.; tree 30-40 feet; pod 6 × 2½ in. Waterfall. (C. 1921).

Calliandra umbrosa, Benth.; quoted without authority for Penang in Flora of British India was really collected in Silhet.

Pithecolobium dulce, Benth.; largely used as a fence plant. (C.)

Pithecolobium bubalinum, Benth. Not seen.

Pithecolobium microcarpum, Benth.; small tree. (C. 1093).

Pithecolobium fasciculatum, Benth.; small tree, rare. (C. 720).

Pithecolobium lobatum, Benth. "Jering"; tree 20-30 feet. (C. 105-711).

Pithecolobium contortum, Mart.; shrub 4-10 feet. (C. 19-264).

Pithecolobium clypearia, Benth.; small tree. Ayer Hitam. (C. 209-489).

Pithecolobium angulatum, Benth.: spreading tree. (C. 489).

ROSACEÆ.

Parinarium, costatum, Bl. "Poko Obie;" tree 30-40 ft. (C. 259).

Parinarium oblongifolium, Hook. f. ?; tree about 40 ft.: drupe 1¼-1½ in. (C. 2163).

Parinarium asperulum, Miq.; tree 30-40 ft.; petals white (C. 203).

Parinarium nitidum, Hook. fil.; small tree 20-25 ft.; drupe round the size of a large pea. (C. 147, 853).

Parinarium Griffithianum, Benth; large tree; drupe 1 in.

long of a dark colour. Muka Head, not common. (C. 1514, 2416).

Parastemon urophyllum, A. D. C.; small tree. branches slender. (C. 1149, 2480).

Prunus martabanica, Hook. f.; tree 40-50 ft. Government Hill. (C. 1512).

Pygeum lanceolatum Hook. f.; tree 20-30 ft.; branches slender, drooping. (C. 216, 735).

Pygeum parviflorum, Teys. and Binnend.; tree 20-30 ft.; fruit black. Government Hill &c., common. (C. 162).

Pygeum, sp., tree 30-40 ft.; fruit ¾ in. Nalm. (C. 938).

Rubus glomeratus, Bl,; common in all parts of the Island. (C. 74).

Rubus moluccanus, L. not seen.

Fragaria indica, Andr.; does not occur other than as a cultivated plant. (C.)

SAXIFRAGACEÆ.

Polyosma integrifolia, Bl.; tree 30-40 ft. Penara Bukit. (C. 1081).

Polyosma mutabilis, Bl.; tree 20-30 ft. Not uncommon. (C. 377, 758).

Polyosma, sp.; tree larger in all its parts than either of the preceding; may be a form of *P. integrifolia*. (C. 1165).

CRASSULACEÆ.

Bryophyllum calycinum, Salisb.; herb 2-3 feet. Common. (C.)

HAMAMELIDEÆ.

Maingaya malayana, Oliv.; tree about 25 feet tall with a stem 6-9 inches diameter. Government Hill. (C. 659).

RHIZOPHOREÆ.

Rizophora conjugata, L.; tree 20-40 feet, largely used for firewood. Common in tidal swamps. (C. 516).

Brugueria eriopetala, W. &. A.; tree not uncommon. (C. 514).

Carallia integerrima, D. C.; tree 30 feet. Government Hill 1000-2000 feet, not common. (C. 1078).

Pellacalyx axillaris, Korth.; medium-sized tree. (C. 937).

Pellacalyx Saccardianus, Scort.; small tree. Penara Bukit. (C. 1031).

Gynotroches axillaris, Miq; tree 25-30 feet, very common. (C. 324, 865).

Anisophyllea zeylanica, Benth. var.; tree 25-30 feet; branches slender, drooping. West Hill. (C. 746).

Anisophyllea grandifolia, Henslow; tree 30-40 feet. Government Hill, not uncommon. (C. 521).

Anisophyllea, sp.; tree 30-40 feet; drupe globular, 2-2½ inches. (This may be *A. Griffithii*). Waterfall. (C. 148, 1511).

COMBRETACEÆ.

Calycopteris floribnnda, Lamk.; large shrub. Waterfall (C. 184).

Combretum squamosum, Roxb.; large scandent shrub. (C. 258 1077).

Combretum chinense, Roxb. Not identified. Collected by Porter.

Combretum acuminatum, Roxb. Large climber, petals yellowish white. Balik Pulau. (C. 2474).

Quisqualis densiflora, Wall.; scandent shrub. (C. 190, 889).

MYRTACEÆ.

Tristania Whitiana, Griff. Not seen.

Tristania Maingayii, Duthie; "Palawan" tree 20-40 feet; bark smooth, grey. Government Hill, &c., common. (C. 238).

Rhodamnia trinervia, Bl.; "Monkoyan" tree 25 feet or more. Common. (C. 51).

Rhodamnia? sp.; tree 40 feet. Penara Bukit 1000 feet. (C. 1446).

Rhodomyrtus tomentosa, Wight; "Kamunting"; shrub 4-10 feet; abundant in places, fruit eaten. (C. 200).

Decaspermum paniculatum, Kurz; small tree 15-20 feet; not uncommon. (C. 33, 177).

Eugenia malaccensis, L. is cultivated. (C).

Eugenia Jambos, L. is not wild. (C).

Eugenia javanica, Lamk.;? small tree, not common. (C. 1114)

Eugenia grandis, Wight; "Krean batu"; large tree, valuable timber. Common near the coast. (C. 751).

Eugenia filiformis, Wall; small tree; branches slender, drooping. Government Hill. (C. 744, 1443).

Eugenia ramosissima, Wall.; tree. Pulau Betong. (C. 973).

Eugenia inophylla, Rox. (C. 974)?

Eugenia Thumra, Rox.; medium-sized tree. Waterfall. (C. 2410).

Eugenia acuminatissima, Kurz; tree. Government Hill. (C. 179).

Eugenia claviflora, Rox. in Flora of British India, is queried for Penang by Wallich in his catalogue which is apparently the only authority for its being a Penang plant.

Eugenia leptantha, Wight; medium-sized tree; fruit black, edible. (C. 697, 749).

Eugenia zeylanica, Wight; tree 20-30 feet, common. (C. 317, 511, 2245).

Eugenia grata, Wall. "Gelam Tikus"; small tree; bark used for tanning purposes. (C. 756).

Eugenia penangiana, Duthie; medium-sized tree. Government Hill 500 feet. (C. 193).

Eugenia skiophila, Duthie. Government Hill in deep shaded ravines. Maingay. Not met with since.

Eugenia chlorantha, Duthie; tree. West Hill 1,500 ft. (C. 180, 1448).

Eugenia lineata, Bl.; small tree. Muka Head &c., (C. 728 976? 2417).

Eugenia bracteolata, Wight; small tree. Government Hill (C. 247, 1089).

Eugenia valdevenosa, Duthie; small tree. Government Hill at 2,000-2,500 feet. (C. 55).

Eugenia expansa, Wall. Not identified. (Wall. cat. 3,567) collected by himself.

Eugenia subdecussata, Wall.; small tree. West Hill 2,500 ft. (C. 864).

Eugenia oblata, Wall?; large branching tree. Government Hill. (C. 212).

Eugenia lævicaulis, Duthie; small tree. (C. 2246).

Eugenia brachiata, Rox. "Krean batu;" tree 25-30 feet. Waterfall, common. (C. 32).

Eugenia verecunda, Wall?; tree. Government Hill. (C. 654).

Eugenia, sps. undetermined in Herb. Penang. (C. 194, 653, 666, 759, 1090, 1152, 1442, 1604, 2224, 2228).

Pseudeugenia perakensis, Scort.; large shrub; not uncommon on Government Hill. (C. 461, 886).

Barringtonia speciosa, Forst.; medium-sized tree. (C. 909).

Barringtonia acutangula, Gaertn.; tree 25-30 ft.; not common. (C. 397).

MELASTOMACEÆ.

Melastoma malabathricum, L.; shrub 3-6 ft. (C. 71).

Melastoma imbricatum, Wall.; not identified. Wall. 4047,

Melastoma molle, Wall.; shrub 3-5 feet. Government Hill 1000-2000 ft., not common. (C. 683).

Melastoma appressum, Wall.; Penang Hill, Hullett.

Melastoma longifolium, Naud. Government Hill Road to Penara Bukit at 1800 feet. (C. 2789).

Allomorphia exigua, Bl.;? shrub 1-3 feet, common. (C. 73,399).

Sonerila erecta, Jack; stem 3-12 inches; common from 1000-2000 feet (C. 1238).

Sonerila affinis, Arn.; stem 3-6 inches. Government Hill 2000-2500 feet; not common. (C.)

Sonerila moluccana, Roxb.; stem 1-2 inches. Not uncommon in damp shady places from sea-level up to 2000 feet. (C. 412).

Marumia nemorosa, Bl.; large climbing shrub; flower large, pink. Penara Bukit, rare. (C. 1008).

Dissochœta annulata, Hook. fil. West Hill. (C. 740).

Dissochœta punctulata, Hook. fil. Said to have been collected here by Walker. Wants confirmation.

Dissochœta bracteata, Bl.; large twining shrub. Government Hill 500-1000 feet. (C. 2298, 80?)

Dissochœta pallida, Bl Government Hill. (C. 2297).

Dissochœta intermedia, Bl. Not identified. Wallich 4052.

Dissochœta celebica, Bl. Not identified. Wallich No. 4050 4052 pars. These two numbers are labelled Singapore and

Penang 1822 and were probably obtained only in the former locality.

Dissochœta gracilis, Bl.; slender twining shrub. (C. 398).

Dissochœta ? sp. undetermined. (C. 1078).

Anplectrum glaucum, Triana. Not seen. Collected by McNair, Jack, Wallich, etc.

Anplectrum pallens, Bl.; twining shrub, branches slender. Government Hill 1000-2500 feet. (C. 471).

Anplectrum divaricatum, Triana. Not identified. Wallich (4051), and Walker.

Anplectrum annulatum, Triana. Not identified. Wallich Cat. No. 4056 obtained by Porter.

Anplectrum polyanthum, C. B. C. Waterfall. (C.) 61).

Medinilla rubicunda, Bl. Not seen. The plant numbered in Wallich's catalogue 4086 was collected at Cape Rachado in Sungei Ujong not in Penang.

Medinilla speciosa, Bl.; shrub 4-6 feet., panicle long, pink, pendulous. C. 874).

Pogonanthera pulverulenta, Bl.; shrub 6-10 feet. Batu Ferengy. (C. 1880).

Pachycentria macrorrhiza, Becc., compact growing shrub 2-3 feet; generally on rocks or in the forks of large trees. (C. 347).

Pachycentria, sp.; straggling shrub. Damp ravines at 2,000 feet. (C. 2225)

Astronia smilacifolia, Triana; small tree 25 feet. Top of Government Hill (C. 743).

Pternandra cœrulescens, Jack; tree 25-30 feet. (C. 879). Var. *Jackiana*. (C. 2220).

Pternandra capitellata, Jack. "Kulit nipis"; tree 20-30 feet. Government Hill, &c., common. (C. 67).

Pternandra paniculata, Benth. Not identified.

Kibessia echinata, Cogn., tree, branches rather slender. (C. 270).

Kibessia pubescens, Done. Not identified.

Kibessia, sp.; small tree apparently different to either of the preceding. Nalm. (C. 953).

Memecylon myrsinoides, Bl.; small compact growing tree; fl. blue. (C. 100-2219).

Memecylon heteropleurum, Bl.; small tree. West Hill. (C. 457-814).

Memecylon microstomum, C. B. C.; small tree. Government Hill 2,000 feet, not common. (C. 766).

Memecylon cœruleum, Jack; small erect shrub; common along the coast, not seen elsewhere. (C. 54).

Memecylon amplexicaule, Roxb.; shrub 8-10 feet tall. Government Hill 2,000 feet. (C. 695).

Memecylon garcinoides, Bl.; small tree. West Hill. (C. 816).

Memecylon acuminatum, Smith, var. *flavescens*; tree 25-30 feet. West Hill 1,000 feet. (C. 815).

Memecylon edule, Roxb.; tree 25 feet high or sometimes much less, fl. blue. Common along the coast. (C. 723).

Memecylon oligoneurum, Bl.? small tree. Ayer Hitam. (C. 1065).

Memecylon, sp.; erect shrub. West Hill. (C. 1773).

Memecylon, sp.; tree 20-30 ft. Government Hill 2000 ft. (C. 2243).

LYTHRACEÆ.

Crypteronia pubescens, Bl. "Bequoie;" tree 20-40 ft. very common at the Waterfall. (C. 110).

Crypteronia glabra, Bl.; large tree 40-50 ft. Government Hill 2500 ft., rare. (C. 739).

Crypteronia Griffithii, C. B. C.; tree 25-30 ft. (C. 1739, 660?)

Duabanga sonneratioides, Ham.; large tree. Balik Pulau, not common. (C. 678).

Sonneratia acida, L.; small tree. Tidal swamps. (C. 1084).

Sonneratia Griffithii, Kurz; small tree. (C. 1108).

ONAGRACEÆ.

Jussiæa repens, L. Common in ditches. (C. 1936).

Jussiæa suffruticosa, L. Rice fields, and generally in damp places. (C. 123, 1972?)

Ludwigia prostrata, Roxb. is not uncommon. (C. 57).

SAMYDACEÆ.

Casearia glomerata, Rox.; small tree. Pulau Betong. (C. 982, 2466?)

Casearia macrocarpa, C. B. C.; tree 20-30 ft. fl. small white. (C. 229, 960).

Casearia albicans, Wall. not seen. (Wallich no 7197).

Casearia, sp.; small tree; fl. minute, white. Government Hill 300-500 ft. (C. 2143).

Casearia sp.; small tree. West Hill. (C 1574).

Homalium longifolium, Benth.; tree 30-40 feet; conspicuous when in flower. (C. 301, 929).

Homalium sp.; tree 30-40 feet; leaves 6-8 × 3-4 inches. Waterfall, only one tree seen. (C. 1592).

Samyda esculenta, Roxb.? (C. 1019).

PASSIFLOREÆ.

Passiflora fœtida, L. is naturalized and much more common than any other plant of this order. (C. 1236).

Modecca singaporiana, Mast.; twining shrub. Penara Bukit, rare. (C. 869).

Modecca nicobarica, Kurz.; very slender twiner; fruit 1½-2 inches, bright red. Not uncommon. (C. 1521).

CUCURBITACEÆ.

Hodgsonia heteroclita, Hook. fil. Not seen. Collected by Porter (Wall cat 6685) and Phillips.

Trichosanthes palmata, Roxb. is not uncommon. (C.)

Gymnopetalum quinquelobium, Miq. Not identified. Collected by Porter.

Mormodica cochinchinensis, Spreng. (C. 890).

Cerasiocarpum? penangense, C. B. C. not indentified. A doubtful plant collected by Wallich. (No. 6704).

BEGONIACEÆ.

Begonia Evansiana, Andr. In Andrews' Botanist's Repository where this plant was first described it is said that Mr. Evan's collector found it growing in the clefts of rocks in the Island of Pulo Penang in 1808. It has never been since met with here and could hardly have been overlooked. It is a Chinese plant.

Begonia guttata, Wall. Not identified. (Wall Cat 3671*a*).

Begonia prolifera, A. D. C. Erroneously attributed to Penang on the strength of a plant collected by Finlayson which really came from one of the Siamese islands.

Begonia sinuata, Wall. Government Hill, &c., common. (C. 390, 481).

Begonia malabarica, Lam.? (C. 1262, 1738).

Begonia, sp. Pulau Betong, rare. (C. 1028).

UMBELLIFERÆ.

Hydrocotyle asiatica, L. "Pegaga;" a common herb; leaves used for curries &c. (C.)

Hydrocotyle rotundifolia, Roxb. Government Hill. (C. 1752).

ARALIACEÆ.

Aralia, sp. aff *A. Thompsonii*, Seem.; small prickly tree 10-15 ft. Government Hill. (C. 462).

Heptapleurum venulosum, Seem.; shrub. (C. 972.

Heptapleurum subulatum, Seem.; shrub. (C. 971, 1246).

Heptapleurum cephalotes, C. B. C.? tree 20-30 ft. not large, Government Hill. (C. 837).

Heptapleurum heterophylla, Seem. Moniot's Road. (C. 2301).

Heptapleurum, sp. collected at Pulau Betong (C. 1950).

Trevesia palmata, Vis. Var.; said to have been collected in Penang by Porter, was probably from Province Wellesley. (C.)

Arthrophyllum diversifolium, Bl.; tree 20-30 ft. not large. Waterfall. (C. 781).

Arthrophyllum pinnatum, C. B. C.; shrub. West Hill 2000 ft. (C. 334).

CORNACEÆ.

Marlea begoniæfolia, Rox.; small tree. Pulau Betong. (C. 940).

Marlea nobilis, C. B. C., Government Hill. (C. 1505).

Mastixia Maingayii, C. B. C.; tall tree. Government Hill. (C. 1564).

Mastixia, sp.; tree 30-40 ft. Pulau Betong. (C. 919).

CAPRIFOLIACEÆ.

Viburnum sambucinum, Reinw; large shrub, sometimes a small tree; flowers white, sweet scented. Top of Government Hill, common. (C. 278).

RUBIACEÆ.

Sarcocephalus Junghuhnii, Miq.; large tree. Government Hill 500 ft. (C. 303, 2751 ?)

Adina rubescens, Hemsley var. *acuminata;* medium-sized tree. Government Hill (C. 369).

Nauclea peduncularis, Wall; tree 25-30 ft. Sungei Penang, not common (C. 1056).

Uncaria sclerophylla, Roxb.; large climbing shrub. Government Hill. (C. 6, 185).

Uncaria attenuata, Korth. Government Hill. (C. 135).

Uncaria canescens, Korth. Government Hill. (C. 331).

Uncaria pteropoda, Miq. Government Hill. (C. 332, 1247 ?)

Uncaria ovalifolium, Roxb. not identified collected by George Porter.

Uncaria dasyneura, Korth. Government Hill. (C. 1070).

Uncaria gambier, Rox. is not wild in Penang.

Uncaria lanosa, Wall. Waterfall. (C. 917).

Uncaria acida, Roxb. is probably one of the above but the description is too meagre to guess which and no type is known to exist.

Coptosapelta flavescens, Korth.; climbing shrub; flower open white, gradually turning yellow. (C. 312, 1029).

Dentella repens, Forst.: prostrate herb; fl. white, ¼ in. (C. 1850).

Greenia Jackii, W. and A.; erect shrub, 6-10 ft.; a common plant near the Coast. (C. 106).

Argostemma pictum, Wall.; small herb; common on damp rocks at 1,000-2,000 feet. (C. 408).

Argostemma verticillatum, Wall. An error. Wallich's specimens came from Nepal, not Penang, as stated in Flora of British India.

Argostemma humile, Wall. Not met with. It was collected by Jack.

Argostemma unifolium, Benn. Damp rocks, common. (C. 990).

Argostemma elatostemma, Hook. fil. West Hill. (C. 962).

Argostemma, sps. undetermined. (C. 342, 955).

Hedyotis macrophylla, Wall. Not identified. (Wallich No. 842).

Hedyotis capitellata, Wall; climber; the most common of the genus. (C. 23).

Hedyotis mollis, Wall. Penara Bukit. (C. 1096).

Hedyotis vestita, Br. Not seen.

Hedyotis glabra, Br. Government Hill. (C. 39).

Hedyotis pinifolia, Wall. Not seen.

Hedyotis tenelliflora, Bl. (C. 2236).

Hedyotis hispida, Retz. Waterfall. (C. 1847).

Hedyotis congesta, Br. Penang Hill (C. 2846).

Hedyotis scabra, Wall. Bagan Jennal. (C.)

Hedyotis, sp. probably new. (C. 977).

Oldenlandia corymbosa, L.; a common weed. (C. 1849, 1988).

Oldenlandia diffusa, Roxb Waterfall; not very common. (C. 1846, 1845).

Oldenlandia Heynii, Br. Common. (C. 1848).

Oldenlandia trinervia, Retz., fl. minute, white. (C. 1844).

Ophiorrhiza mungos, L.; small herb. West Hill. (C. 979).

Ophiorrhiza discolor, Bl. Pulau Betong. (C. 1761).

Ophiorrhiza tomentosa, Jack. West Hill. (C. 907).

Mussœnda glabra, Wall.; climbing shrub; common. (C. 116).

Mussœnda villosa, Wall. (C. 289, 1934) ?

Mussœnda cordifolia, Wall. Not identified. (Wallich 6260). Imperfectly known.

Lucinœa morinda, D. C. Not seen here. "Penang and Singapore" No. 3487 Wallich.

Trisciadia truncata, Hook. fil. Not identified. On the Hill, Wallich in 1822. Not collected since.

Adenosacme longifolia, Wall.; shrubby, 1-2 feet; fruit white. (C. 845).

Aulacodiscus premnoides, Hook. fil.; small tree. Penara Bukit, not common. (C. 987).

Urophyllum Griffithianum, Wight; small tree. Government Hill, rare. (C. 1189, 2294). ?

Urophyllum glabrum, Wall.; common at 1000-2000 feet on Government Hill. (C. 260, 1759).

Urophyllum streptopodium, Wall.; small tree. West Hill. (C. 1770).

Urophyllum Blumeanum, Wight; Govornment Hill. (C. 261).

Urophyllum villosum, Wall.; large shrub; common. (C. 178).

Urophyllum? sp.; shrub, smaller in all its parts than either of the preceding. (C).

Webera odorata, Roxb. Not identified. Collected by Wallich.

Webera fragrans, Bl.; small tree. (C. 480).

Webera, sp. Near *Maingayii*, Hook. fil.; large shrub. (C. 1060).

Webera mollis, Wall.? small tree. West Hill. (C. 745).

Webera stellulata, Hook. fil. Not identified. Wallich, Griffith.

Webera longifolia, Hook. fil. shrub 6-10 feet cymes 6-10 inches, pendulous; flower white. Waterfall. (C. 947, 1144).

Webera Wallichii, Hook. fil. Not identified. Wallich 8401. I.

Webera, sp.; large shrub. Waterfall. (C. 2217).

Anomanthodia auriculata, Hook. fil.; small tree. Moniot's Road, not common. (G. 1075).

Randia, sp. near *longiflora*, Lam.; slender tall tree. (C.818).

Randia densiflora, Benth.; small tree; common. (C. 128-923).

Randia, sp. near *densiflora*, Benth. (C. 796).

Randia anisophylla, Lamk. "Randa"; tree 25-30 feet; fl. white fugacious. The commonest of all the Randias. (C. 164).

Randia exaltata, Griff.; spreading tree; corolla white with purple markings; fruit the size of a small orange, black. (C. 793).

Randia macrophylla, Br.; shrub; rare in Penang, (C. 966).

Randia, sp; large climbing shrub; fl. yellowish white; fruit 1 in., globular. Government Hill. (C. 927).

Randia, sp. small erect spinous shrub. Waterfall. (C. 1498).

Gardenia carinata, Wall.; tree 34-40 feet, spreading. (C. 525).

Gardenia tubifera, Wall.; tree 20-30 feet, compact, leafy. Government Hill. (C. 686).

Petunga longifolia, D. C. Not identified. Penang. Phillips, Wallich.

Petunga, sp.; small slender tree 15-20 feet. Government Hill. (C. 726).

Di lospora ? sp.; small tree. Penara Bukit. (C. 1449).

Timonius jambosella, Thw.; small close-growing tree; not uncommon. (C. 95-263).

Timonius Rumphii, D. C. Government Hill. 2844).

Canthium didymum, Roxb.; tree 25 feet. Waterfall. (C. 219).

Canthium glabrum, Bl.; small tree. Penara Bukit. (C. 988).

Canthium confertum, Korth. Government Hill. (C. 1694-1119).

Canthium horridum, Bl. Not seen. Cantley, Wallich.

Canthium, sp.; probably *oliganthum*, Miq. (C. 1756).

Ixora Brunonis, Wall. Not identified. Wallich. Phillips.

Ixora pendula, Jack; large shrub. Waterfall (C. 2240).

Ixora grandifolia, Zoll and Moritz. Not seen.

Ixora villosa, Roxb. Not identified. Wallich.

Ixora coccinea, L.; shrub; cultivated, wild as an escape. (C.)

Ixora amœna, Wall. Government Hill. (C. 79).

Ixora fulgens, Roxb.; tall shrub; common. (C. 479, 1730 ? 2257 ? 2255 ?)

Ixora congesta, Roxb.; shrub 6-10 ft. (C. 667, 1729).

Ixora, sp. near *congesta*; shrub, not exceeding 12 in. (C. 400).

Ixora opaca, Br.; small tree. Muka Head. (C. 719).

Ixora lucida, Br. Not identified. Wallich 6135, very little known.

Ixora nigricans, Br.; large shrub. Pulau Betong. (C. 986, 2451).

Ixora, sp.; small tree 20 ft. (C. 1112).

Pavetta indica, L. Pulau Betong. (C. 908).

Coffea ? sp.; small tree, fl. not seen. (C. 757, 1774).

Morinda tinctoria, Roxb. tree 15-25 feet; very common in places. (C. 679).

Morinda umbellata, L.; large climbing shrub. (C. 149).

Prismalomeris albidiflora, Thw.; shrub 3-5 ft.; fl. white common near the Coast. (C. 339).

Gynochthodes sublanceolata, Miq. Wallich No. 8385 "Penang" is the only authority for this here and the specimens have neither flower nor fruit, so are doubtful.

Psychotria malayana, Jack. Not seen.

Psychotria polycarpa, Miq.; climber. Penara Bukit. (C. 1095).

Psychotria sarmentosa, Bl.; common Government Hill. (C. 951).

Psychotria morindæfolia, Wall.; climber. (C. 478).

Psychotria stipulacea, Wall.; erect shrub, 4-6 ft. collected by Jack. (C. 732).

Psychotria Jackii, Hook. fil.; not seen in Penang, common at Pangkor. (C.)

Psychotria tortilis, Bl.; 6-18 in.; stem fleshy. Not uncommon. (C. 405, 1269).

Psychotria angulata, Korth.; erect shrub, 2-4 feet. (C. 726, 14)?

Psychotria Halferiana, Kurz. not met with. Recorded from "Penang Wallich" in Flor. Brit. Ind. but Wallich's No. 8368 was collected in Singapore where this plant is common.

Psychotria penangensis, Hook. fil.; Not identified, insufficiently known. Top of Government Hill, Maingay.

Psychotria sp.; sarmentose shrub, berries white. (C. 2215).

Psychotria? sps. undetermined. (C. 754, 981, 160).

Chasalia curviflora, Thw.; shrub 2-3 feet; stem rather fleshy; common (C. 414, 680).

Var longifolia. Top of Government Hill.

Geophila reniformis, Don.; creeping herb; corolla ivory white; fruit bright red; common. (C. 1930).

Lasianthus cyanocarpus, Jack; shrub 4-6 feet; fruit blue $\frac{1}{4}$-$\frac{1}{3}$ inch. Not uncommon. (C. 650, 1116).

Lasianthus, sp. near *Wallichii*, Wight; shrub 6-7 feet. Government Hill in damp ravines. (C. 284).

Lasianthus adpressus, Hook. fil. Not identified. Wallich 8443, 8442 in part.

Lasianthus densifolius, Miq. Not identified.

Lasianthus crinitus, Hook. L. Not identified. Collected by Wallich, locality doubtful.

Lasianthus Kurzii, Hook. fil. Not identified; locality doubtful more likely from Martaban.

Lasianthus chinensis, Benth.; tall shrub. West Hill 2000 feet. (C. 1594).

Lasianthus, sps. undetermined. (C. 760, 785).

Hydnophytum montanum, Bl. (C. 2164).

Pœderia fœtida, L.; slender twining shrub. (C. 24).

Spermacoce hispida, L.; prostrate herb; flower pink; common in open grassy places. (C. 1986, 1987).

COMPOSITÆ.

Vernonia chinensis, Less.; shrubby 1-2 feet; flower blue; abundant in orchards and waste places. (C. 931).

Vernonia arborea, Ham.; tree 25-30 feet. (C. 2-926.)

Vernonia cinerea, Less.; annual herb, 1-3 feet. Waterfall. (C. 1698).

Elephantopus scaber, L.; dwarf rigid herb; abundant in coco-nut plantations. (C. 130).

Adenostemma viscosa, Forst; erect annual herb. (C. 985).

Ageratum conyzoides, L.; fl. blue or white, abundant. C.).

Mikania scandens, Willd.; slender twining herb. Penara Bukit. (C. 1042).

Microglossa volubilis, D.C. Not seen. Collected by Jack and Wallich.

Blumea chinensis, D.C. Not seen.

Blumea balsamifera, D.C.; 6-10 feet. Tanjong Bunga. (C. 29).

Blumea lacera, D.C.; annual, 1-3 feet. Waterfall. (C. 1699).

Laggera flava, Benth. Not identified. Quoted as occurring in Penang in Flora British India but with no collector's name.

Pluchea indica, Less.; "Bluntas" shrubby 4-5 feet; common in marshy places. (C. 509).

Sphœranthus africanus, L.; annual herb 1-2 feet; not uncommon in rice fields. (C. 1942).

Eclipta alba, Hassk.; much branched, sometimes erect. (C. 1057).

Wedelia biflora, D.C.; climbing herb, fl. yellow. (C. 1568-40).

Spilanthes acmella, L.; common annual herb. (C. 1929).

Synadrella nodiflora, Gærtn.; branching herb; common in open places. (C. 913).

Bidens pilosa, L.; one of the commonest weeds. (C. 1669).

Gynura sarmentosa, D.C.; twining herb. Penara Bukit. (C. 1205).

Gynura Pseudo-china, D.C. Government Hill. (C. 2995).

Emilia sonchifolia, D.C.; annual herb. Penara Bukit. (C. 37).

Launœa pinnatifida, Cass. Government Hill.

GOODENOVIEÆ.

Scœvola Kœnigii, Vahl.; shrub 6-10 feet; branches stout, soft. Common along the coast. (C. 320).

CAMPANULACEÆ.

Pentaphragma begoniæfolium, Wall.; herb 6-12 in.; common 1,000-2,000 feet. (C. 329).

ERFIACEÆ.

Rhododendrom Teysmanii, Miq.; shrub 2-4 feet; flowers yellow. Government Hill 2,000 feet. (C. 530).

PLUMBAGINEÆ.

Plumbago zeylanica, L.; is not unco n non, but not indigenous. (C.).

Plumbago rosea, L.; found in one or two places, no indigenous. (C.).

MYRSINEÆ.

Mœsa ramentacea A. D.C.; large rambling shrub; never a tree in Penang. Common. (C. 48-251).

Mœsa ramentacea var ovata, not identified.

Myrsine capitellata, Wall; small tree. Government Hill. (C. 1013).

Embelia ribes, Burm.; large climbing shrub, common. (C. 18).

Embelia ribes var. pinangiana, Oliv.; fruit larger than the type, of a reddish colour. (C. 306).

Embelia coriacea, A. D. C.; climber, rare. (C. 1047).

Embelia canescens, Jack. Not identified. Only collected by Jack.

Embelia Limpanii, Schiff. Government Hill. (C. 305).

Labisia pothoina, Lindl.; shrubby 6-10 inches, common. (C. 1192).

Ardisia lanceolata, Rox. Not identified. Roxburgh.

Ardisia colorata, Rox.; small tree. Penara Bukit. (C. 1052.)

Ardisia divergens, Rox. Not identified. Jack and Maingav.

Ardisia tuberculata, Wall. var. *Ophirensis;* small shrub. West Hill 2500 feet. (C. 2249).

Ardisia porosa, Clarke; straggling shrub. West Hill 2000 feet. (C. 1769).

Ardisia crenata, Roxb.; shrub 2-4 feet; very common. (C. 337).

Ardisia villosa, Roxb.; shrub 1-2 feet. Government Hill. 2000 feet. (C. 1597).

Ardisia oxyphylla, Wall.; small tree. Government Hill. (C. 668).

Ardisia humilis, Vahl; small tree 20-25 feet. (C. 217).

Ardisia, sp. in herb. Penang; leaves 10 × 4½ inches; berry ¼ inch. (C. 2755).

Pimelandra Wallichii, A. D. C.; small tree 10-15 feet. Government Hill, not uncommon. (C. 1156).

Aegiceras majus, Gaertn.; tree 30 feet; common in swamps near the coast. (C. 62, 513).

SAPOTACEÆ.

Chrysophyllum sp.; tree 25-30 feet. Batu Feringgi. (C.) 1072).

Sideroxylon malaccense, Clarke; tree 40 feet; fruit 1-1½ inches, rusty tomentose. (C. 1452).

Sideroxylon ferrugineum, Hk. & A.; tree 40 feet, coast. (C. 273, 703).

Sideroxylon, sp. near *firmum*, Burck; small tree. West Hill 2,500 feet, rare. (C. 1575).

Sideroxylon, sp.; small tree. Batu Feringgi. (C. 2254).

Sideroxylon, sp.; small tree. Penara Bukit. (C. 1450).

Dichopsis gutta, Benth.; tree 50-60 feet. Government Hill, &c. (C. 780).

Bassia Motleyana, Clarke; tree 50 feet. Government Hill, not common. (C. 1451).

Payena Maingayii, Clarke; small tree. West Hill 2,000 feet. (C. 1565).

Payena malaccensis, Clarke. Telok Bahang. (C. 159).

Payena lucida, A. D.C. Not identified. (Wallich 4147).

Payena costata, tree. Waterfall (C. 1516).

Payena sp.; near *Leerii*, Hook. fil.; tree 50-60 feet. Government Hill. (C. 777).

EBENACEÆ.

Maba buxifolia, Pers.; low close growing bush. Telok Bahang, not common. (C. 708).

Maba merguensis, Hiern? large shrub. (C. 705).

Maba sp.; large tree. Muka Head. (C. 718).

Maba sp.; small tree. Penara Bukit. (C. 448).

Diospyros apiculata, Hiern; shrub 6-8 feet. Government Hill 1,000 feet, rare. (C. 1584).

Diospyros microphylla, Bedd.; small tree. Government Hill 300 feet. (C. 1513).

Diospyros sapotoides, Kurz; small tree. Telok Bahang. (C. 1564).

Diospyros decipiens, Clarke; small tree about 20-30 feet. Telok Bahang. (C. 1453-1454).

Diospyros sp.; near *oleifolia*, Wall.; tall tree. Government Hill 1,200 feet. (C. 1573).

Diospyros undulata, Wall.; tree medium-size, 40 feet or more. Telok Bahang, &c. (C. 1085).

Diospyros lucida, Wall.; tree 25-30 feet. Government Hill, near the chalet. (C. 250).

Diospyros oblonga Wall. "Koomoi"; tree 30-40 feet high. Sungei Penang. (C. 2487).

Diospyros venosa, Wall. Not identified.

Diospyros sp.; tree 20-30 feet; leaves 6-8 × $2\frac{1}{2}$ in.; fruit conical $\frac{3}{4}$-1 in. Waterfall. (C. 2221).

Diospyros sp. near *ebenum* small tree. Batu Feringgi. (C. 1602).

Diospyros sp. *aff decipiens*, Clarke; small tree, 20 feet. Bukit Padre. (C. 1276).

Diospyros sp.; small tree. Moniot's Road. (C. 1693).

Diospyros sp.; small tree; leaves 10-12 inches; flower small white. (C. 898, 1932).

STYRACACEÆ.

Symplocos ferruginea, Roxb.; tree 25 feet; common. (C. 206).

Symplocos sp. aff. *fasciculata*, Zoll.; tree 30-40 feet. Penara Bukit. (C. 1039).

Symplocos adenophylla, Wall; small tree; not uncommon. (C. 402).

Symplocos racemosa, Roxb.; tree 40-50 feet; flower white. Muka Head and Government Hill. (C. 715).

Symplocos cerasifolia, Wall.; tree 30-40 feet. Government Hill 1200 feet. (C. 1503).

Symplocos rubiginosa, Wall.; small tree. Penara Bukit and Government Hill. (C. 528, 1692).

Symplocos sp. near *rosea*, Benth.; small tree; fruit ¾ inch long. Penara Bukit, but one tree seen. (C. 1099).

Symplocos sp.; small tree. West Hill. (C. 325).

Symplocos sp., tree. Muka Head. (C. 958).

Styrax serrulatum, Roxb.; tree 25-30 feet; branches slender, drooping; flower white. (C. 1187, 1538).

OLEACEÆ.

Jasminum pubescens var. bracteata, Rox. Not identified. Recorded from Penang, Wallich in Fl. Brit. Ind. Wallich's specimens (No. 2867) came from the Calcutta gardens, and were originally obtained from Bencoolen in Sumatra.

Jasminum Maingayii, Clarke. Government Hill. (C. 643).

Jasminum befarium, Wall. (C. 83)?

Jasminum scandens, Vahl. (C. 1920, 42)?

Jasminum subtriplinerve, Bl. (C. 643).

Jasminum sp. near *dispermum*, Wall. (C. 1227).

Linociera pauciflora, Clarke; tree 30 feet; not uncommon. (C. 277, 695).

Olea maritima Wall.; small tree. Coast. (C. 222).

Olea dentata, Wall.; small tree. Telok Bahang. (C. 950).

Myxopyrum nervosum, Telok Bahang. (C. 2891).

APOCYNACÆ.

Willughbeia coriacea, Wall.; large climbing shrub. Waterfall. (C. 1500, 847).

Willughbeia sp.; large shrub. Penara Bukit. (C. 1121).

Chilocarpus Maingayii, Dyer.? (C. 475).

Leuconotis eugeniifolius, A. D. C. "Getah Gharu"; scandent shrub; not uncommon. (C. 1061).

Melodinus monogynus, Roxb. Not identified; It is said to have been collected by Maingay, otherwise only known from the Himalaya and Assam.

Melodinus orientalis, Bl.; large rambling shrub; fruit the size of a small orange. (C. 687).

Melodinus coriaceus, Oliv.; large climber reaching to the top of tall trees; fruit round, the size of an orange. (C. 1040).

Alyxia coriacea, Wall. Not identified. Collected by Wallich.

Alyxia pilosa, Miq. is a doubtful Penang plant. Not seen. Mount Ophir is the correct locality for this plant.

Alyxia stellata, Roem. and Sch. Not identified. Collected by Wallich.

Hunteria corymbosa, Rox.; small tree, common. (C. 237, 707).

Cerbera odollam, Gærtn.; tree 20-30 ft.; common. (C.)

Vinca rosea, L. is quite common in open sandy places. (C.)

Alstonia scholaris, Br. "Getah Paule;" tall straight tree; wood white, light. (C.)

Alstonia macrophylla, Wall. "Chengah Petrie;" tree tall but not large. Common. (C. 378).

Alstonia angustifolia, Wall. Not identified. Collected by Maingay.

Dyera costulata, Hook. fil.; large tree; wood very similar to that of *Alstonia scholaris*, not common. (C.)

Tabernæmontana corymbosa, Rox; shrub 6-8 ft. Pulau Betong, not common. (C. 1763).

Tabernæmontana peduncularis, Wall.; small shrub. (C. 790).

Tabernæmontana malaccensis, Clarke; small shrub 2 feet. Waterfall, not common. (C. 1775).

Parsonsia spiralis, Wall; twining shrub. Batu Feringgi. (C. 450).

Parsonsia ovata, Wall.; Old road to Batu Feringgi. (C. 820).

Wrightia lævis, Wall.; tree 40-50 ft.; fl. greenish white, 1 in. in diam. Government Hill. (C. 1767).

Wrightia.? sp.; small tree. Pulau Betong. (C. 848).

Strophanthus Jackianus, Wall. "Bunga hantu"; shrub 3-4 feet; flower brick red, fugacious. (C. 188).

Strophanthus dichotomas, D. C. not seen. Common in Singapore. The drawing labelled Penang in Herb. Kew (the only authority for its occurring here) was probably wrongly localised.

Urceola elastica, Roxb.; large climbing shrub. Government Hill. (C. 823).

Urceola lucida, Benth.; woody climber. Muka Head. C. 661, 941).

Urceola branchysepala, Hook fil. Panti Achie. (C. 403).

Parameria glandulifera, Benth, ; climbing shrub. Government Hill, rare. (C. 1142).

Parameria polyneura, Hook fil? Waterfall. (C. 1455, 1456).

Parameria densiflora, Oliv.; large climbing shrub; flower dull red. Government Hill. (C. 158).

Chonemorpha macrophylla, Don; large climber. (C. 832).

Aganosma marginata, Don; large shrub. (C. 664).

Aganosma? sp.? climbing shrub; flower white. Penara Bukit. (C. 2441).

Rhynchodia Wallichii, Benth.; flower white, fragrant. (C. 838).

Anodendron pauciflorum, Hook fil; climbing shrub. Government Hill. (C. 663, 1457).

Anodendron paniculatum, A. D. C.; large climbing shrub. (C. 1740, 2358.)

Ichnocarpus ovatifolium, A. D. C. Tanjong Bunga. (C. 810).

Mircrochites polyantha, Miq.; climber, covering rocks and trees; roots emitted the whole length of the stem. (C. 850).

ASCLEPIADEÆ.

Antherandra acutifolia, Dcne. Not identified. Wallich (4458).

Streptocaulon Wallichii, W. and A.; twining shrub; very common. (C. 4, 472, 2122).

Secamone emetica, Br.; slender twining shrub. (C. 1896, 225).

Secamone Finlaysonii, Wight? (C. 922).

Toxocarpus Griffithii, Dcne. Not identified. Collected by Porter.

Toxocarpus acuminatus, Benth.?; glabrous twining shrub; fl. white. Government Hill. (C. 244).

Calotropis gigantea, Br. I have seen only in gardens. (C.).

Asclepias curassavica, L. is met with rarely. (C. 344).

Cynanchum ovalifolium, Wight; twiner. Penara Bukit. (C. 871, 1270).

Cynanchum corymbosum, Wight. Not identified. 8231 F, Wallich.

Gongronema, sp.; West Hill. (C. 1545).

Pergularia puberula, Miq.: twining shrub, rare. (C. 932).

Tylophora hirsuta, Wight Not identified.

Tylophora Wallichii, Hook. fil.; slender twiner. Pulau Betong, very rare. (C. 933).

Heterostemma, sp.; twiner. Telok Bahang. (C. 1707).

Dischidia nummularia, Br.; slender herb; often completely covering trunks of trees or rocks. (C.).

Dischidia benghalensis, Colebr. Not common. West Hill at from 2000-2500 ft. (C. 2160).

Dischidia rhombifolia, Bl. Batu Feringgi. (C. 1897).

Hoya multiflora, Bl. The only evidence for this here is a drawing labelled Penang preserved at Kew.

Hoya parviflora, Wight. (C. 689).

Hoya latifolia, Don. Not seen.

Hoya obtusifolia, Wight, Not identified. "Penang? Wallich" (No 8167) probably from elsewhere.

Hoya coronaria, Bl. Telok Bahang. (C. 236).

Hoya diversifolia, Bl. Not uncommon on rocks close to the sea. (C. 928).

Hoya coriacea, Bl. Not identified. Penang? Wallich 8163. (Probably wrong locality).

Ceropegia lucida, Wall.; slender twining herb. Penara Bukit, rare. (C. 1007).

LOGANIACEÆ.

Buddleia, sp. Top cf Government Hill, probably introduced. (C. 1058).

Fagræa obovata, Wall.; small tree. Government Hill, not common. (C. 346, 2432).

Fagræa racemosa, Jack; small tree. 10-15 ft. Common at the Waterfall, (C. 280).

Fagræa fragrans, Rox. "Temusu;" tree 20-30 ft.; not common. (C. 314, 1566).

Fagræa Wallichiana, Benth. "Temusu Bukit;" tree 40-50 ft.; fl. yellow. Common at 2000-2500). ft., and a valuable timber. (C. 375).

Strychnos laurina, Wall.; climbing shrub. (C.1021).

Strychnos malaccensis, Benth; Muka Head. (C. 1515).

Strychnos pubescens, Clarke. (C. 970).

Strychnos Tieute, Lesch.? (C. 709, 1490).

BORAGINEÆ.

Cordia subcordata, Lam.; large shrub. Coast. (C. 393).

Ehretia Wallichiana, Hk. f. & T.; tree 40-50 ft. (C. 1034).

Tournefortia Wallichii, DC; large rambling shrub. (C. 1011).

Heliotropium indicum, L.; common annual weed. (C. 345).

CONVOLVULACEÆ.

Erycibe Princei, Wall. Recorded from Penang as collected by Wallich in Flor. Brit. India is an error. Wallich's plant came from Singapore where it is common.

Erycibe Griffithii, Clarke; ? large climbing shrub; fruit 1½ inch. long, brown. Government Hill. (C. 772).

Erycibe, ?; large scandent shrub. (C. 2837).

Erycibe coriacea, Wall. scandent shrub; berry ¼ inch. Government Hill. (C. 911, 1273).

Erycibe, sp.; large climber; named *E. Griffithii* in herb. Penang but is not the same as 772. (C. 181).

Argyreia tiliæfolia, Wight. Pulau Petong. (C. 1970).

Lettsomia strigosa, Roxb. Waterfall. (C. 498).

Lettsomia adpressa, Miq.; twiner; corolla rosy pink. A rather common plant. (C. 318).

Lettsomia penangiana, Miq.; large climber; flower not seen. (C. 1586).

Ipomea angusfolia, Jacq; slender twiner; corolla yellow (C. 1068).

Ipomea denticulata, Choisy. (C. 1974).

Ipomea staphylina, Roem. & Sch.; large climber. (C. 470).

Ipomea cymosa, Roem. & Sch.; twiner; corolla pink. Bukit Padre. (C. 1083).

Ipomea pes-tigridis, L. Open sunny places, (C. 3033).

Ipomea Turpethum, Br. (C. 1703).

Calystegia hederacea, Wall. "Penang, Porter."

Evolvulus alsinoides, L.; prostrate herb; corolla pale blue. Open sandy places. (C. 1601).

Breweria cordata, Bl.; large climber; corolla white, not uncommon. (C. 1066).

SOLANACEÆ.

Solanum nigrum, L, herb 12-18 in.; fruit black. (C.).

Solanum torvum, Swartz; shrub 4-6 feet. (C. 90).

Solanum indicum, L.; shrubby 3-4 feet. (C. 10).

Solanum sarmentosum, Nees. 2628 F. Penang 1822 Wallich. (locality probably wrong).

Solanum trilobatum, L.; climber, rare. (C. 851).

Solanum aculeatissimum, Jacq; procumbent; berry globular 1-1½ in., orange. (C.).

SCROPHULARINEÆ.

Adenosma capitatum, Benth.; herb 1-2 feet; fl. blue Waterfall (C. 1886).

Adenosma hirsutum, Kz. (C. 22381).

Limnophila villosa, Bl. Waterfall. (C. 1839).

Herpestis Monniera, H. B. & K.; small herb; common in swamps. (C. 1939).

Artanema sesamoides, Benth.; large herb; fl. lilac. Not uncommon in the south of the island. (C. 945).

Torenia polygonoides, Benth. Not seen.

Torenia mucronulata, Benth.; prostrate herb. Waterfall. (C. 1837).

Torenia ciliata, Smith. Waterfall, not common. (C.).

Vandellia crustacea, Benth.; fl. lilac or blue. (C. 1854).

Vandellia pedunculata, Benth. "Kra Nasi." Paddy fields, common. (C. 1973).

Bonnaya veronicæfolia, Spreng.; fl. white and pink, or lavender and white; common. (C. 1852).

Bonnaya brachiata, Link. & Otto. (C. 1851).

Scoparia dulcis, L. "Cha Padang." Very common. (C. 688).

Striga lutea, Lour.; herb 4-6 in.; fl. yellow. Common in open places among long grass. (C. 1840).

LENTIBULARIEÆ.

Utricularia flexuosa, Vahl.; fl. golden yellow; common in ditches and rice fields. (C. 519).

Utricularia bifida, L.; not uncommon in marshy land among grass. (C. 1177).

Utricularia racemosa, Wall.; fl. white; grows with *U. bifida* at the Waterfall. (C.).

Utricularia orbiculata, is said to have been collected in Penang near the Waterfall by Prof. Goebel. Not seen.

GESNERIACEÆ.

Æschynanthus Lobbiana, Hook. fil.; Government Hill. (C.).

Æschynanthus marmorata, N.E. Brown; fl. green and yellow. Government Hill 2,000-2,500 feet; generally on large trees. (C. 1700-2142).

Didymocarpus cordata, Wall.; 1-2 feet or more high; corolla white. Damp shady ravines. (C. 452).

Didymocarpus corchorifolia, Wall. Government Hill. (C. 1239).

Didymocarpus crinita, Jack; stem 6-12 in.; corolla white (pale purple form in Perak) common (C. 410).

Didymocarpus reptans, Jack; creeping; corolla violet or white. Waterfall, not common. (C. 1706).

Didymocarpus incana, Benth.; leaves silvery grey; corolla blue. Common on damp rocks. (C. 297).

Didissandra frutescens, Jack; shrubby, 2-3 feet. Damp ravines at 1,600-2,000 feet. (C. 828).

Cyrtandromœa acuminata, Benth.; stem 1-2 feet; corolla white. Penara Bukit, rare. (C. 1016).

Stauranthera grandiflora, Benth.; herb 3-6 in.; fl. lavender and yellow. Balik Pulau, very rare (C. 1753).

Rhynchotechum parviflorum, Bl. var. *penangensis*, not identified. A very doubtful plant based on imperfect material.

Cyrtandra dispar, D. C.; shrub 3-5 ft. Moniot's Rd. (C. 1204).

Cyrtandra decurrens, De Vriese; stem 12-18 in, fleshy; corolla greenish white. (C. 1018).

Cyrtandra, sp. Pulau Betong. (C. 3035).

BIGNONIACEÆ.

Oroxylum indicum, Vent. tree 30-40 ft. Pulau Betong, not common. (C. 983).

Dolichandrone Rheedii, Seem.; small tree; corolla large white, fugacious. Tidal Swamps. (C. 1184).

Stereospermum chelonioides, D. C. tree 50-60 ft; corolla pale yellow; Capsule 12-24 in long. (C. 2431).

Stereospermum glandulosum, Miq.; small tree. (C. 140).

Diplanthera bancana, Scheff.; tree 30-40 ft.; corolla yellow. Not common. (C. 870, 1569).

PEDALINEÆ.

Sesamum indicum, D. C. annual herb 1-2 ft. (C. 1582).

ACANTHACEÆ.

Thunbergia alata, Bojer. Government Hill. Introduced. (C).

Nelsonia campestris, Br.; prostrate herb. Balik Pulau. (C. 1750).

Ebermaiera lanceolata, Hassk. Not identified. Penang Porter, Wall. No. 7489.

Ebermaiera angustifolia, T. And.; dwarf herb. Pulau Betong. (C. 1931).

Ebermaiera axillaris, Nees. Not identified. Is stated by Anderson to have been collected by Wallich, No. 2414.

Ebermaiera elongata, Nees. "Wallich in Penang." Nees makes no mention of it in the Plantæ Asiaticæ Rariores which he doubtless would have done had he found it in Wallich's collections. It is a native of Java.

Ebermaiera lasiobotrys, Nees.; Pulau Betong. (C. 1350).

Ebermaiera racemosa, Miq.; herb 6-10 in. Common on West and Government Hills 2,000-25,000 ft. (C. 406).

Hygrophila salicifolia, Nees. Pulau Betong. (C. 1757).

Ruellia repens, L.; stem 9-12 in.; corolla rose colour fugacious. (C. 1876).

Strobilanthes Maingayii, Clarke. Not identified. One of Maingay's plants, locality quite uncertain.

Strobilanthes collinus, Nees. Not identified. Collected by Porter. Wall. Cat. 2343.

Strobilanthes, sp.; shrubby; corolla white. Government Hill. (C. 298).

Strobilanthes, sp. Muka Head. (C. 954).

Strobilanthes, sp.; prostrate herb. Government Hill 2,000 feet. (C. 2761).

Acanthus ebracteatus, Vahl. Common in tidal swamps. The seeds are reputed cure for boils. (C. 510).

Barleria conspicua, Nees. Not identified.

Asystasia intrusa, Br.; stem 3-4 ft. Waterfall. (C. 1853).

Asystasia coromandeliana, Nees; fl. white. purple, or yellow. Common. (C. 2419).

Asystasia Kunthiana, Nees. Not identified. A doubtful plant collected by Wallich.

Eranthemum album, Nees. Not seen. Collected by Porter.

Eranthemum malaccensis, Clarke; small shrub. Waterfall, not uncommon. (C. 499, 348).

Eranthemum graciliflorum, Nees. Not identified. A very doubtful plant. Wall. Cat. 2427.

Andrographis paniculata, Nees; stem 6-18 in. Not uncommon in open spots. (C. 1877).

Justicia inconspicua, Wall. Cat. 2475 is absolutely unknown.

Justicia gandarussa, L. Balik Pulau. (C. 791).

Justicia decussata, Roxb. Pulau Betong. (C. 1765).

Justicia ptychostoma, Wall. Not identified. Collected by Porter.

Justicia Maingayii, Clarke. Not identified. Collected by Maingay.

Adhatoda vasica, Nees; shrub 4-5 ft. Ayer Hitam. (C. 1017).

Peristrophe acuminata, Nees. Balik Pulau. (C. 681).

VERBENACEÆ.

Lantana indica, L.; shrub 1-2 feet; fl. pink. Balik Pulau not common. (C. 121).

Lantana camara, L.; has run wild all over the Island.

Stachytarpheta indica, Vahl; 2-3 feet. Common. (C. 867).

Callicarpa arborea, Rox.; small tree 25-30 feet. Telok Bahang, not common. (C. 699).

Callicarpa cana, L. apparently Wallich's No. 1834. 1 is taken as the authority for this as a Penang plant in the Flora of British India but that was cultivated in the Calcutta gardens.

Callicarpa pedunculata, Br. Wallich 1834, 2. Collected by Geo. Porter. Not seen.

Callicarpa longifolia, Lamk.; shrub 6-10 feet; berry white. Government Hill. (C. 309).

Premna cordifolia, Rox. shrub. (C. 681.) ?

Premna divaricata, Wall; scandent shrub. (C. 215).

Gmelina asiatica, L. tree 25-30 feet. Common (C. 454).

Vitex trifolia, L.; small tree. (C. 98).

Vitex pubescens, Vahl. "Halban"; a very common tree. (C. 64).

Vitex coriacea, Clarke; tree compact, 20-25 feet; flower purple. Government Hill. (C. 323).

Vitex vestita, Wall.; small tree; corolla yellow. Government Hill. (C. 265).

Vitex glabrata, Br.; tree, larger than either of the preceding. Not common. (C. 1071).

Clerodendron Lobbii, Clarke. Not identified. Collected by Lobb.

Clerodendron calamitosum, L.; small shrub. Introduced.? (C).

Clerodendron deflexum, Wall. ; shrub 1-3 feet. Government Hill. (C. 81).

Clerodendron paniculatum, Rox. ; shrub 6-10 feet ; corolla red. Not seen except near villages. (C. 313).

Clerodendron neriifolium, Wall. ; common on the sea shore. (C. 2782).

Clerodendron villosum, Bl. ; shrub 4-6 ft. A far more common plant than either of the others. (C. 101).

Clerodendron acuminatum, Wall. ; shrub. (C. 1539).

Peronema canescens, Jack ; tree 25-30 ft. Common near the race course ; not seen elsewhere. (C. 2427).

Sphenodesma triflora, Wight ; scandent shrub. Waterfall. (C. 210).

Sphenodesma barbata, Schauer. Collected by Geo. Porter.

Sphenodesma pentandra, Jack ; large rambling shrub (C. 269).

Avicennia officianalis, L. ; small tree common in Mangrove swamps. (C.).

LABIATÆ.

Ocimum basilicum, L. ; herb 2 ft. Tanjong Tokong. (C. 2492).

Mochosma polystachyum, Benth ; annual herb. (C. 34).

Coleus atropurpureus, Benth. Waste places, common. (C.).

Hyptis brevipes, Poit. ; is a very common plant. (C. 1111).

Hyptis suaveolens, Poit. ; is not nearly so common as *brevipes*. (C. 1250).

Pogostemon patchouli, Pelletier ; found as an escape, is not in my opinion indigenous. (C.).

Dysophylla auricularia, Bl "Ekor Kuching." Common in damp places. (C. 868).

Anisomeles ovata, Br. Waterfall &c. ; common. (C. 65).

Anisomeles malabarica, Br. Not identified. Collected by Wallich No. 2037, 2.

Leucas zeylanica, Br. Annual herb 1-2 ft. ; corolla white. Very common. (C. 409).

Leucas linifolia, Spreng. is a much smaller plant. (C. 1115).

Gomphostemma parviflorum, Wall. not seen. There is some error in the Flora of British India and in Bentham's paper on the Labiatæ in the Plantae Asiaticæ Rariores ii 12. *G. parviflorum* No. 2158 was collected at Silhet but *G. crinitum*. Wall. Cat. No. 2159 was collected in Penang by Wallich in 1822. It has not been gathered there since.

PLANTAGINEÆ.

Plantago major, L. Government Hill 2,500 feet. (C. 2157).

NYCTAGINEÆ.

Boerhaavia repens, L. Not uncommon near George Town. (C. 902).

AMARANTACEÆ.

Amaranthus spinosus, L. "Bayam." A good vegetable (C. 245).

Cyathula prostrata, Bl. Common in coco-nut gardens. (C. 17-944).

Pupalia atropurpurea, Miq. The authority for this is Wallich's Catalogue 6933-2. Penang and Singapore, as the plant has never since been seen in the Malay Peninsula, the locality is probably wrong.

Achyranthes aspera, L. Common in sandy soils. (C. 1835).

Alternanthera sessilis, Bl. Common everywhere. (C. 1043).

POLYGONACEÆ.

Polygonum tomentosum, Willd.; tall herb. Damp places. (C. 16).

Polygonum barbatum, L. Pulau Betong. (C. 943).

Polygonum strigosum, Br. Not seen. Collected by Wallich.

Polygonum pedunculare, Wall. Commoner than either of the others. (C. 921).

NEPENTHACEÆ.

Nepenthes ampullaria, Jack. Penara Bukit, rare. (C.).

Nepenthes phyllamphora, Willd. Common among low bushes in swampy places. (C. 1202).

Nepenthes albo-marginata, Lobb. Government Hill, common. (C.).

ARISTOLOCHIACEÆ.

Thottea dependens, Klotzsch; shrubby 1-2 feet. Waterfall. (C. 1170-1507).

Aristolochia Roxburghii, Klotzsch; twiner. Waterfall. (C. 2464).

Aristolochia, sp. leaves deeply lobed. Government Hill. (C. 330).

Bragantia tomentosa, Bl. Waterfall. Common. (C. 2754).

PIPERACEÆ.

Piper ribesioides, Wall. West Hill, rare. (C. 2256).

Piper sumatranum, Cas. Not identified. Wallich 6646B. Not only is the identification of this specimen doubtful but the locality Penang is marked doubtful in the catalogue.

Piper caninum, Bl. Balik Pulau. (C.).

Piper longum, L. "Kudak." Common. (C. 887).

Piper peepuloides, Rox. Government Hill 2,000 ft. (C. 2291).

Piper miniatum, Bl. Batu Feringgi. (C. 821, 2290).

Piper rostratum, Rox.? West Hill. (C. 967).

Piper penangensis, Cas. Not identified. Wallich 6644 B.

Piper lonchitis, Roem. and Schultes. Government Hill. (C. 734).

Piper leptonema, Hook. fil. (C. 1771).

Piper attenuatum, Ham. Not identified. Locality very doubtful.

Piper subpeltatum, Willd. Wallich 6638*a*. Not seen.

Piper sulcatum, Bl. Government Hill. (C. 443).

Piper porphyrophyllum, N. E. Brown. Common on Government Hill. (C.)

Piper, sp.; near *Blumii*. Government Hill. (C. 792).

Pipermia pellucida, Kunth.; herb, succulent, 6-18 in. Common about George town. (C. 1958).

CHLORANTHACEÆ.

Chloranthus officinalis, Bl.; compact undershrub; berries white. (C. 1180, 1708).

Chloranthus brachystachys, Bl.; shrubby, less compact than the preceding, berries red. (C. 1050).

MYRISTICACEÆ.

Myristica fragrans, Houtt. Cultivated, often found on land that has reverted to forest. (C.).

Myristica bracteata ; A. D. C. ; large tree 50 ft. high. Government Hill, rare. (C. 1497).

Myristica Maingayii, Hook. fil. ; a tree 50-60 ft. high and 18-24 in. in diam. ; fruit oblong 3 × 2 in. larger than *M. fragrans* Government Hill, rare. (C. 2455).

Myristica elliptica, Wall. ; tree 30-40 ft. ; fruit larger than *M. fragrans ;* and mace blood-red, laciniate as stated by Maingay. (C. 1122).

Myristica superba, Hook. fil. ; collected by Phillips. (C. 2966).

Myristica tomentosa, Hook, fil. ; tree 25-30 ft. Waterfall and other places (C. 1748).

Myristica, sp. closely resembling *M. Canarioides*, King. (C. 943).

Myristica Griffithii, Hook. fil. ; a tree 40-50 ft. Government Hill 1500 ft. (C. 2406).

Myristica Farquhariana, Wall. ; medium-sized tree, not uncommon. (C. 487, 804).

Myristica Forbesii, King. Collected by Maingay. Not seen.

Myristica Irya, Gærtn. ; large spreading tree 60-70 ft. high. South of the Island, not common. (C. 936).

Myristica oblongifolia, King. Not seen.

Myristica Scortechinii, King ; Government Hill (C. 2769).

Myristica intermedia, Bl. ; medium sized tree. West Hill 1500 ft. (C. 1044).

Myristica furfuracea, Hook. fil. ; Government Hill 2000 feet. (C. 1459).

Myristica furfuracea var. *major*, King. (C. 1459, 2456).

Myristica laurina, Bl. ; small tree. West Hill, not uncommon. (C. 1191, 2457).

Myristica glauca, Bl. (C. 935).

Myristica Missionis, Wall. ; tree 20-30 feet. Pulau Betong. (C. 700, 935).

Myristica glaucescens, Hook fil. ; tree 25-30 feet, common. (C. 1559).

Myristica Hookeriana, Wall.; a tall but not very large tree. Government Hill. (C. 202).

Myristica Curtisii, King; a tree with slender branches. Waterfall. (C. 1024, 1301).

Myristica racemosa, King; tree 40-50 feet high. Nalm pass, rare. (C. 934).

Myristica Ridleyana, King; tree 40-50 feet high. Government Hill. (C. 2458.)?

Myristica eugeniæfolia, A. D. C. is said to have been collected in Penang. Not identified. It is little known plant and probably identical with one of the preceding.

MONIMIACEÆ.

Kibara coriacea, Endl.; small tree 20 feet. Government Hill, not common. (C. 1242, 2255).

LAURINEÆ.

Apollonias sp.; tree 40-50 feet. Penara Bukit. (C. 1098).

Beilschmiedia sp.; large tree; fruit ovate, 1 inch long. Government Hill 2000 feet, rare. (C. 1015).

Dehaasia Kurzii, King? compact growing tree. West Hill. (C. 1193).

Dehaasia sp.; tree 30-40 feet; fruit with fleshy red pedicel ¾ inch long. Government Hill. (C. 1183).

Endiandra sp.; tall tree, branches slender; fruit oblong, 1¼ inches. Moniot Road. (C. 1230).

Ediandra, sp.; tree 40-50 feet high, fruit 2 in. long black-purple. Batu Feringy. (C. 3068).

Endiandra, tree 30-40 tall, leaves obovate 7 x 4 in. fruit oblong dark purple. Pantie Achie. (C. 3067).

Micropora Curtisii, Hook. fil; tree 40 feet leafy. Government Hill 1000-2000 feet. (C. 524, 1214).

Cinnamomum javanicum, Bl. very doubtful, some leaves collected by Walker are the only authority for this here.

Cinnamomum iners, Reinw.; tree medium-size, very common. (C. 156).

Cinnamomum nitidum, Bl.; recorded hence in Flor. Brit. Ind. is an error. No. 2583*a* Wall. Cat. is *C. iners* Reinw. and

was collected in Penang. No. 2583 B.C.D. which are referred to *C. nitidm* were not from Penang.

Cinnamomum vimineum, Nees; small tree; leaves when bruised emit a strong aromatic scent. Government and West Hills. (C. 1571).

Cinnamomum mollissimum, Hook fil; small tree 20-25 feet. West Hill 2500 feet. (C. 308).

Cinnamomum Parthenoxylon, Meissn. "Medang"; large tree, timber valuable. (C. 512, 1038).

Cinnamomum Lampongum, Miq; Medium-sized tree. (C. 2252).

Machilus rimosa, Bl.; large spreading tree. Penara Bukit, not uncommon. (C. 942, 1030).

Phœbe opaca, Bl. Not seen. Collected by Porter.

Phœle multiflora, Bl.; large tree. Pulau Betong. (C. 2739).

Alseodaphne peduncularis, Hook. fil. Not identified, Wallich 2596.

Alseodaphne sp.; middling sized tree. Waterfall. (C. 1536).

Actinodaphne magrophylla, Nees; tree 30-40 feet. Waterfall and Pulau Betong. (C. 2304, 2473).

Actinodaphne pruinosa, Nees; tree 40-50 feet. Moniot's Road, rare. (C. 1020).

Litsæa sebifera, Pers.; tree 20-30 feet. West Hill. (C. 2305).

Litsæa sp.; near *sebifera*, but with fasciculate not racemose inflorescence. (C. 1182).

Litsæa sessiliflora, Hook. fil; large shrub. Government Hill. (C. 649).

Litsæa grandis, Wall.; tree 40-50 feet. Top of Government Hill. (C. 1104).

Litsæa polyantha, Juss.; small tree. Government Hill 2500 feet. (C. 283).

Litsæa amara, Bl. Not identified. Maingay.

Litsæa salicifolia, Rox.; small tree. Batu Hitam. (C. 787).

Litsæa læta, Wall.; small tree. Moniot's Road. (C. 2159).

Litsæa penangiana, Hook. fil; small tree. (C. 1587)?

Litsæa myristicifolia, Wall.; tree 30-40 feet. (C. 769, 1079).

Litsæa nitida, Bl.; tree 40 feet. Moniot's Road. (C. 795).

Litsæa zeylanica, C. & Fr. small tree. Tanjong Bunga, &c., common. (C. 468, 446).

Litsæa rugosa, Kurz; Not identified. an obscure plant probably not a Litsea at all.

Litsæa Noronhiana, Bl.; large tree 50-60 feet. Government Hill. 1200 feet. (C. 2449).

Litsæa sp.; tree 30-40 feet. Top of Government Hill. (C. 1103).

Litsæa sp.; small tree; fruit the size of a pea. (C. 733, 1073).

Lindera oxyphylla, Benth. Not identified. Porter. (Wall. cat. 2547).

Cassytha filiformis, L.; twiner, common on rocks and low bushes near the coast. (C. 1203).

PROTEACEÆ.

Helicia attenuata, Bl.; small tree. Telok Bahang. (C. 1181).

Helicia, sp.; small tree quite distinct from *H. attenuata*. Penara Bukit. (C. 3020).

Helicia petiolaris, Bennett; not seen. Formerly cultivated in Penang according to Jack. It is not rare in Singapore.

THYMELEACEÆ.

Wikstrœmia indica, C. A. Mey., small shrub. Open places, often in Nutmeg plantations. (C. 30).

Linostoma pauciflorum, Griff.; climbing shrub. Muka Head. (C. 713).

Aquilaria Malaccensis, Lam.; tree 40-60 feet bark smooth, grey; flower white, scented. (C. 1534).

This tree produces the *Gaharu* Wood.

ELEAGNACEÆ.

Elæagnus latifolia, L.; large climbing shrub. Top of Government Hill. (C. 904).

LORANTHACEÆ.

Loranthus Lobbii, Hook fil. Government Hill. (C. 85, 389).

Loranthus pulcher, D. C. (C. 394).

Loranthus pentapetalus, Roxb. Government Hill and Penara Bukit, common. (C. 205).

Loranthus coccineus, Jack; Government Hill. (C. 243.

Loranthus ferrugineus, Rox. Government Hill; common. (C.).

Loranthus pentandrus, L. Ayer Hitam. (C. 476).

Loranthus ampullaceus, Rox. Government Hill. (C. 66).

Loranthus globosus, Rox. Not identified. Apparently only differs from the preceding in having fleshier narrower leaves and globose fruit, but *L. ampullaceus* is very variable in the form of the leaf.

Loranthus albidus, Bl. Government Hill and Penara Bukit, not uncommon. (C. 1113).

Viscum ovalifolium, Wall. Not seen.

Viscum articulatum, Burm. Government Hill. (C.).

Notothixos malayanus, Oliv.; parasitic, much branched shrub; fruit white. Coast. (C. 233).

SANTALACEÆ.

Henslowia lobbiana, A. D. C.; long twining shrub. Government Hill, common. (C. 21).

Henslowia buxifolia, Bl.; parasitic on the roots of trees in damp shady places. (C. 477).

Champereia Griffithiana, Bl.; small tree. Telok Bahang, not common. (C. 155, 1163, 2262).

EUPHORBIACEÆ.

Euphoria atoto, Forst.; shrubby 1-3 ft. Open sandy places near the coast. (C. 333, 1883).

Euphorbia pilulifera, L.; erect annual herb 1-2 ft. (C. 1838).

Euphorbia thymifolia, Burm.; much branched prostrate herb. Government Hill. (C. 1945).

Euphorbia, sp. near *nerufolia*, L.; erect shrub, 2-5 ft. Common at the Waterfall. (C. 1567).

Bridelia stipularis, Bl. Not identified. Collected by Wallich. (C. 7878 N).

Bridelia tomentosa, Bl.; small tree. Common. (C. 112).

Bridelia penangiana, Hook. fil.; small tree Government Hill. (C. 527).

Bridelia rufa, Hook. fil.; small tree. Waterfall. (C. 1480).

Bridelia Curtisii, Hook. fil.; large shrub. Telok Bahang. (C. 97).

Cleistanthus hirsutulus, Hook. fil.; small tree. Waterfall. (C. 1464).

Cleistanthus membranaceus, Hook. fil. (C. 1481).

Cleistanthus nitidus, Hk. f.; small tree, Government Hill. (C. 146).

Cleistanthus pedicellatus, Hook. fil.; small compact tree. Government Hill, rare. (C. 169).

Actephila excelsa var. javanica, Miq.; shrub, not common. (C. 674).

Phyllanthus emblica, L. "Buah Malakka;" spreading tree. Not common. (C.).

Phyllanthus frondosa, Wall.; shrub 3-5 ft.; fruit the size of a pea. Batu Feringgi. (C. 819, 1263).

Phyllanthus Kunstlerii, Hook. fil. Penang at 800-1000 feet, Kunstler. Not seen.

Phyllanthus urinaria, L. Not seen.

Phyllanthus niruri, L.; herb 6-18 in. Common. (C. 1841).

Phyllanthus acutus, Wall. Collected by Finlayson (Wall. Cat. No. 7931) was probably not from Penang at all.

Phyllanthus pulcher, Wall.; shrub 2-4 ft.; common near villages, doubtfully wild. (C. 78).

Phyllanthus distichus, Muell. Arg. Cultivated.

Glochidion insulare, Hook. fil.; small tree. Government Hill. (C. 1728).

Glochidion hirsutum, Muell. Arg. Not identified.

Glochidion macrostigma, Hook. fil. Penara Bukit. (C. 852).

Glochidion Wallichianum, Muell. Arg. Not identified. Wallich 7873).

Glochidion obscurum, Bl.; tree 30-40 feet. Waterfall, common. (C. 46).

Glochidion nanogynum, Hook. fil. Not identified. Wallich 8003 B.

Glochidion desmocarpum, Hook. fil. Not identified. Penang, herb. Hooker perhaps from elsewhere.

Glochidion lævigatum, Hook. fil; small tree. (C. 833, 1593).

Glochidion superbum, Baill.; small tree, common. (C. 111).

Glochidion coronatum, Hook. fil.; large shrub sometimes a tree. (C. 213).

Glochidion Curtisii, Hook. fil; large shrub. Government Hill. (C. 670).

Glochidion perakense, Hook. fil; shrub. West Hill. (C. 1120).

Breynia discigera, Muell. Arg.; large shrub. West Hill. (C. 196).

Breynea coronata, Hook. fil; large shrub or small tree; common. (C.).

Sauropus albicans, Bl.; small undershrub. West Hill. (C. 963).

Cyclostemon longifolius, Bl.; tall tree. Government Hill.

Cyclostemon Curtisii, Hook. fil; small tree. Government Hill. (C.).

Cyclostemon sp.; small tree 12-15 feet. Waterfall. (C. 1776).

Choriophyllum malayanum, Benth.; tree 40 feet or more. Government Hill, &c.; common. C. 1148, 881, 1198).

Aporosa ficifolia, Baill.; small tree. West Hill. (C. 1483, 1583).

Aporosa nigricans, Hook. fil; large shrub. West Hill. (C. 1570, 1574).

Aporosa microsphæra, Hook. fil; small tree. (C. 1482, 1466, 1470, 1467).

Aporosa aurea, Hook. fil; large shrub. Waterfall. (C. 1460).

Aporosa lunata, Benth; tree 20-30 feet. Moniots Road. (C. 1468).

Aporosa Benthamiana, Hook. fil; small tree 25-30 feet. (C. 1469).

Aporosa stellifera, Hook. fil; small tree. Penara Bukit. (C. 1472).

Aporosa Prainana, King mss.; small tree. Waterfall and Government Hill. (C. 1476, 1477).

Antidesma pachystachys, Hook. fil. Not identified. Wallich 8569.

Antidesma velutinosum, Bl.; large shrub or small tree. Government Hill. (C. 672).

Antidesma velutinosum, var. *lancifolia*; shrub 6-10 feet. (C. 863).

Antidesma Ghœsembilla, Gærtn. ; low spreading tree. Waterfall, &c. Common. (C. 782-1554).

Antidesma leucocladon, Hk. f ; shrub 5-6 feet high ; ripe fruit black, smooth fleshy. (C. 2280).

Antidesma Bunius, Spreng. Moniot's Road 2278.

Antidesma fallax, Muell. Arg. ; tree 30-40 feet. Penara Bukit. (C. 1473, 984 ?).

Antidesma Moritzii, Muell Arg. small tree. Tanjong Bonga. (C. 230).

Antidesma sp. ; small tree. Telok Bahang. (C. 1150).

Baccaurea parviflora, Muell. Arg. ; small tree, common. (C. 166, 1169).

Baccaurea macrophylla, Muell. Arg. Not identified. Penang. Phillips.

Baccaurea Griffithii, Hook. fil. ; tree 30-40 feet. Waterfall. (C. 1474).

Baccaurea brevipes, Hook. fil. ; small tree, not uncommon. (C. 1568, 1478).

Baccaurea Wallichii, Hook. fil. Not identified. Wallich 8073.

Baccaurea, sp. A. of Fl. Brit. Ind. ; tree 30-40 feet ; bark almost black. Government Hill. (C. 1463).

Baccaurea, sp. tree 20-30 feet high ; berries white, globular, pubescent. (C. 3021).

Galearia fulva, Muell. Arg. Not identified. Wallich 8585c. Phillips.

Galearia pedicellata, Br. Not identified. Wallich 8585. Philips.

Galearia Jackiana, Br. Not identified. Penang, Jack.

Galearia subulata, Muell. Arg. In Sonder's herbarium from Lindley's herbarium. Not identified, probably from elsewhere.

Galearia Lindleyana, Muell. Arg. shrub. West Hill. (C. 176).

Microdesmis caseariæfolia, Pl. ; erect shrub 4-6 feet. Waterfall. (C. 1491).

Microdesmis sp. small shrub. Waterfall. (C. 1489).

Aleurites moluccana, Willd. ; tree 30-40 feet or more. Not seen in any place where it might not easily have been introduced. (C. 1210).

Croton argyratus, Bl.; small tree 20-25 ft., common. (C. 232).

Trignostemon longifolins, Baill.; shrub 8-10 ft. Waterfall. (C. 1475).

Trigonostemon indicus, Muell. Arg.; small tree 15-25 ft.; back smooth, grey. Government Hill. (C. 218).

Ostodes muricata, Hook. fil.; shrub 6-10 ft. Waterfall. (C. 1484).

Dimorphocalyx malayanus, Hook. fil.; tree 20-25 feet; flower white, conspicuous. Waterfall. (C. 806).

Dimorphocalyx Kunstlerii, King; small tree. Waterfall. (C. 1517).

Erismanthus obliqua, Wall.; small tree. 25 ft. Waterfall, common. (C. 1471).

Agrostistachys Gaudichaudi, Muell. Arg. collected by Gaudichaud. Not identified.

Agrostistachys longifolia, Benth. var. *malayana*. Not identified. Wallich.

Claoxylon indicum, Hassk.; small tree. Pulau Betong. (C. 897).

Claoxylon longifolium; Muell. Arg.; small tree. (C. 675).

Claoxylon longifolium var. brachystachys. (C. 1101).

Claoxylon Wallichianum, Muell. Arg.; shrub. Government Hill. (C. 644).

Acalypha indica, L.; annual herb, common. (C. 891, 2147).

Cœlodepas Wallichianum, Benth.; small tree with very hard wood. Penara Bukit. (C. 1271).

Alchornea villosa, Muell. Arg., var. *glabrata;* tall shrub. Government Hill. (C. 214).

Alchornia discolor, Hook. fil.; shrub. Government Hill. (C. 822).

Cœlodiscus montanus, Muell. Arg.; shrub. Penara Bukit. (C. 1261).

Mallotus barbatus, Muell. Arg. Not identified. Wallich 7822.

Mallotus cochinchinensis, Lour.; small tree; common. (C. 43).

Mallotus Porterianus, Muell. Arg.; large shrub or small tree. (C. 1461, 1462).

Mallotus Griffithianus, Hook. fil. ; tree 25-30 feet. Waterfall and Government Hill. (C. 2260-2286).

Mallotus lancifolius, Hook. fil. ; shrub 8-10 feet. Government Hill 2,000-2500 feet. (C. 684).

Mallotus sub-peltatus, Muell. Arg. Government Hill. (C. 1557).

Mallotus penangensis, Muell. Arg. Government Hill. (C. 755).

Mallotus repandus, Muell. Arg. Not seen.

Cleidon javanicum, Bl. ; not seen.

Macaranga pustulata, King ; small tree Government Hill. (C.).

Macaranga Tanarius, Muell. Arg. ; spreading tree 30-40 feet. Pulau Butong, not common. (C. 1949).

Macaranga Curtisii, Hook. fil. ; medium-sized tree. West Hill. (C. 286).

Macaranga hypoleuca, Muell. Arg. ; small straight tree 25-30 feet. Government Hill. (C).

Macaranga megalophylla, Muell. Arg. ; tree 30-40 feet. Government Hill and Waterfall. (C. 1588).

Macaranga populifolia, Muell. Arg. ; Not identified.

Macaranga javanica, Muell. Arg. ; small tree, common. (C. 76).

Macaranga triloba, Muell. Arg. ; small tree. Government Hill. (C. 1479).

Macaranga Lowii, King ; small tree 15-20 feet. Government Hill, not uncommon. (C. 276, 799).

Endospermum malaccense, Muell. Arg. medium-sized spreading tree. Government Hill. (C. 316).

Gelonium multiflorum, A Juss. ; small tree. Pulau Betong. (C. 924).

Gelonium bifarium, Rox. ; small tree. Government Hill. (C. 53).

Gelonium glomerulatum, Hassk. ; shrub. Telok Bahang. (C. 224).

Chætocarpus castanocarpus, Thwaites ; small tree. Waterfall Government Hill &c. ; common. (C. 725, 449, 658).

Baliospermum axillare, Bl. ; shrub. Government Hill. (C 77.)

Epiprinus malayanus, Griff. ; small tree 15-20 ft. Nalm, rare. (C. 2472).

Cnesmone javanica, Bl. "Jelatang Rusa;" climbing shrub with stinging hairs. Government Hill. (C. 384).

Sapium baccatum, Rox. ; tree 25-30 feet. Not uncommon. (C. 836).

Sapium indicum, Willd. ; tree 30 feet. Coast. (C. 1605).

Excœcaria agallocha, L. ; tree ; common in Mangrove swamps. (C. 11, 1026).

Excœcaria quadrangularis, Muell. Arg. ; shrub 2-4 feet. Waterfall and Pulau Betong. (C. 989).

Sebastiana chamælea, Muell. Waterfall-gardens in grass plots.

URTICACEÆ.

Trema timorensis, Bl. ; small tree ; branches slender. Bagian Jermal, rare. (C. 1935).

Trema angustifolia, Bl. ; small tree ; branches rigid. (C. 1893).

Trema amboinensis, Bl. ; tree 20-30 feet ; very quick growing. Common. (C. 102, 268).

Gironniera nervosa, Pl. ; medium-sized tree, 30-40 feet. Government Hill, rare. (C. 192).

Gironniera subœqualis, Pl. ; tree 30-40 feet. Telok Bahang, rare. (C. 1074).

Gironniera parvifolia, Pl. ; tree 20-30 feet. Government Hill, common. (C. 529, 1506).

Phyllochlamys Wallichii, King ; thorny shrub 6-10 feet. Waterfall, not uncommon. (C. 174).

Streblus asper, Lour. Not seen.

Sloetia Sideroxylon, Teysm and Binnend. "Tampinis;" tree medium size, wood durable, in great demand. (C. 198).

Sloetia penangiana, Oliv. "Tampinis daun besar;" tree, branches less rigid and leaves larger than the preceeding. (C. 380).

Sloetia Wallichii, King ; not identified. Wallich No. 9090.

Ficus pisifera, Wall. ; small tree. Sungei Penang. (C. 1132).

Ficus gibbosa, Bl. ; small tree. Coast. (C. 948).

Ficus parietalis, Bl. ; Not identified.

Ficus pilosa, Reinw. Not identified. Very doubtful.

Ficus bracteata, Wall. Not seen.

Ficus globosa, Bl. (C. 2508).

Ficus xylophylla, Wall. Government Hill 2500 feet. (C. 2216).

Ficus rigida, Miq.; is common. (C.).

Ficus dubia, Wall.; tree 30-40 feet. Penara Bukit. (C. 1128).

Ficus glabella, Bl.; small tree. Tanjong Bunga. (C. 1126).

Ficus retusa, L. Not seen.

Ficus vasculosa, Wall.; tree Penara Bukit. (C. 1133).

Ficus punctata, Thunb. Not seen. Wallich.

Ficus rostrata, Lamk. Penara Bukit, common. (C. 1124, 1127).

Ficus hispida, L. f.; small tree 15-20 feet, common. (C.).

Ficus Miquelii, King; tree. Waterfall. (C. 1749, 1889)

Ficus Ribes, Reinw. Not identified.

Ficus fistulosa, Reinw. Not identified.

Ficus lepicarpa, Bl.; small tree. Waterfall. (C. 1130).

Ficus recurva, Bl.; creeping shrub. (C. 171, 1131).

Ficus annulata, Bl. Sungei Penang. (C. 2509).

Ficus Curtisii, King. A large tree. Glugor and Telok Bahang. (C. 1982).

Ficus villosa, Bl.; woody creeper; generally on rocks. West Hill, &c., common. (C. 173).

Ficus diversifolia, Bl.; small erect shrub 2-6 feet; not uncommon. (C. 873).

Ficus alba, Reinw.; small tree 10-12 feet, common. (C. 1129).

Ficus chrysocarpa, Reinw. Not seen. Wallich.

Ficus glandulifera, Wall.; small tree; not uncommon up to 2500 feet. (C. 1134).

Ficus variegata, Bl. Not seen. King's collector.

Ficus chartacea, Wall. var. *torulosa*. (C. 1711).

Artocarpus rigida, Bl. "Tamponey"; large tree, sometimes cultivated for its fruit. (C. 1984).

Artocarpus integrifolia, L.; The Jack, cultivated in almost every vilage, often found in a half-wild state. (C.).

Artocarpus polyphema, Persoon. The Champedak. Cultivated.

Artocarpus lanceæfolia, Rox. "Nangka pipit"; tree. Penara Bukit. (C.).

Artocarpus chaplasha, Rox. Government Hill. (C.).

Artocarpus Lakoocha, Rox.: tree 30-40 feet, deciduous. Government Hill 2,000 feet. (C. 1222, 906, 1251).

Artocarpus Gomeziana, Wall. var. *Griffithii*, King. "Tampong"; compact leafy tree 30-40 feet. (C. 657).

Balanostreblus ilicifolia, Kurz. Not identified. On Penang Island. King's collector.

Conocephalus suaveolens, Bl. "Ara jankang"; large climbing shrub, Pulau Betong. (C. 1745).

Conocephalus amœnus, King; large climber. Pulau Betong. (C. 1980).

Conocephalus Scortechinii, King. Government Hill. (C.).

Conocephalus subtrinervius, Miq. Penara Bukit, by the side of streams. (C. 1009).

Fleurya interrupta, Gaud.; annual herb 1-2 feet; common in waste places. (C. 915).

Laportea sp.; shrub 6-10 feet. Wang Seraya and Nalm Pass, not common. (C. 1100).

Pilea muscosa, L. Abundant at the Waterfall. (C. 1233).

Pellionia javanica, Wedd.; dwarf herb. Balik Pulau. (C. 682).

Pellionia acaulis, Hook. fil. Not indentified. On damp rocks, King's collector.

Elatostema sessile, Forst.; herb 12-18 inches. Damp shady places, Balik Pulau. (C. 922).

Elatostema molle, Wedd. Not indentified. Phillips.

Procris frutescens, Bl.; stem woody 1-2 feet. Government Hill. (C. 486).

Pouzolzia indica, Gaud.; prostrate herb. (C. 1938, 2145).

Pouzolzia pentandra, Benn.; 2-3 feet, common. (C. 1879).

Pipturus mollissimus, Wedd.; large climbing shrub, Penara Bukit. (C. 673, 1032).

JUGLANDEÆ.

Engelhardtia Wallichiana, Lindl.; medium-sized tree. Government Hill 2000-2500 feet. (C. 56).

Engelhardtia serrata, Bl.; tree 30-40 feet. Muka Head. (C. 1716).

Engelhardtia nudiflora, Hook. fil. Not seen. Government Hill. Maingay.

MYRICACEÆ.

Myrica sp.; middling sized tree. West Hill 2500 feet. C. (903).

CASUARINEÆ.

Casuarina equisetifolia, Forst. "Kayu Ru." Cultivated; indigenous. (C.).

CUPULIFERÆ.

Quercus oidocarpa, Korth. "Berangan Babi"; large tree. Telok Bahang, rare. (C. 434).

Quercus Wallichiana, Lindl.; medium-sized tree, 20-40 feet. Government Hill, common. (C. 252, 253).

Quercus sundaica, Bl.; low spreading tree. Government Hill 2000 feet, rare. (C. 367, 442).

Quercus Curtisii, King; medium-sized tall tree. Waterfall. (C. 1253).

Quercus Wenzigiana, King; tree 20-30 feet. Government Hill 2,000 feet. (C. 360, 368).

Quercus Rassa, Miq.; tree branches slender, drooping. Government Hill 2000 feet. (C. 362, 363, 255).

Quercus lucida, Rox.; tall tree, not very large. West Hill 2500 feet. (C. 436, 930).

Quercus Omalkos, Korth.; tall tree. Government Hill 2000 feet, rare. (C. 435).

Quercus cyclophora, Endl.; large tree, not uncommon. Government Hill 1000-2000 feet (C. 361).

Quercus discocarpa, Hance; tree about 25 feet. Top of Government Hill. (C. 1155).

Quercus encleisocarpa, Korth.; small tree. Government Hill 1000 feet. (C. 254).

Quercus Maingayii, Benth.; large tree. Government Hill and Bukit Laksamana, rare. (C. 267).

Quercus sp. (*nitida*, Bl.?); small tree. West Hill 2500 feet. (C. 366).

Castanopsis javanica, A.D.C.; large tree. Government Hill. 1000 feet. (C. 419).

Castanopsis sumatrana, A.D.C.; medium-sized tree. Waterfall. (C. 1563).

Castanopsis Wallichii, King; tree tall, not large. Government Hill 1000 feet. (C. 416).

Castanopsis Curtisii, King; medium-sized tree. Penara Bukit, rare; only one tree seen. (C. 1691).

SALICICNEÆ.

Salix tetrasperma, Rox.; tree 20-30 feet; not uncommon in damp places. (C. 698).

GNETACEÆ.

Gnetum Gnemon, L. "Buah Maningo"; erect pyramidal tree 30-40 feet, cultivated for its fruit. (C. 856).

Gnetum Brunonianum, Griff.; erect shrub 3-5 feet; fruit smaller than G. Gnemon. (C. 878).

Gnetum neglectum, Bl.; extensive climber completely covering low trees; common. (C. 877).

Gnetum macrostachyum, Hook. fil; large climber; stem 2-3 inches diam. Government Hill 2000-25000 feet. (C. 1109).

CONIFERÆ.

Dacrydium elatum, Wall.; large tree. Government Hill; common. (C.).

Podocarpus neriifolia. Don; tree 30 feet or more Government Hill. (C.).

Podocarpus cupressina, Br.; small graceful tree. (C.).

Agathis loranthifolia, Salis.; tree 60-100 feet with a straight clean stem, common. (C.).

HYDROCHARIDEÆ.

Blyxa malayana, Ridl.; aquatic herb. Telok Bahang, common. (C. 1888).

Ottelia alismoides, Pers.; aquatic herb. Common in ditches near the town. (C. 851).

BURMANNIACEÆ.

Burmannia cœlestis, Don. Not uncommon in open grassy places. (C.).

ORCHIDEÆ.

Microstylis congesta, Reich. f. Pulau Betong 500 feet, rare. (C.).

Microstylis Maingayii, Hook. fil. Bukit Laksamana 1800 feet; not common. (C. 1005).

Oberonia anceps, Lindl. Waterfall. (C.).

Liparis elegans, Lindl. Moniot's Road on rocks, not uncommon. (C. 507).

Liparis longipes, Lindl. (C.).

Dendrobium pumilum, Rox. Near the Coast. (C.).

Dendrobium lonchophyllum, Hook. fil. Government Hill 2,000 feet. (C.).

Dendrobium serra, Lindl. Collected by Porter and Maingay.

Dendrobium grande, Hook. fil. A figure in Kew Herbarium is the only record for this plant here.

Dendrobium Leonis, Rchb. fil. On mangosteen trees. (C.).

Dendrobium sinuatum, Lindl. Obtained by Maingay.

Dendrobium subulatum, Hook. fil. Western Road, growing on the shade trees. (C. 2408).

Dendrobium villosulum, Wall. Collected by Porter.

Dendrobium crumenatum, Swartz. Pigeon-orchid. Common on coco-nut trees; the most abundant of any Orchid. (C.).

Dendrobium secundum, Wall. Not common. (C.).

Dendrobium sanguinolentum, Lindl. Government Hill 2000 feet. (C.).

Dendrobium bifarium, Lindl. Government Hill 2000 feet. (C.).

Bulbophyllum pileatum, Lindl. Government Hill. (C. 1141).

Bulbophyllum Medusæ, Rchb. fil. Government Hill. (C.).

Bulbophyllum capitatum, Lindl. Government Hill on *Dacrydium elatum*, not uncommon. (C. 2883).

Bulbophyllum leptosepalum, Hook. fil. Government Hill. (C. 415).

Bulbophyllum bisetosum, Lindl. Telok Tikus, rare. (C. 1979).

Cirrhopetalum vaginatum, Lindl. West Hill. (C. 355, 1777).

Cirrhopetalum concinnum, Hook. fil. var. Top of Government Hill.

Cirrhopetalum longescapum, Teysm. Penang, Lobb. The specimen in the Buitenzorg Herbarium consists only of a portion of a stout scape without flowers or leaves. The plant has not since been seen.

Eria Maingayii, Hook. fil. Government Hill. Maingay.

Eria nutans, Lindl. Government Hill 2000 feet. (C.).

Eria neglecta, Ridl. Government Hill. (C.).

Eria pulchella, Lindl. On rocks near the coast. (C. 1735).

Eria pellipes, Rchb. fil. Maingay.

Eira ferox, Bl. Lobb. Maingay.

Eria oligantha, Hook. fil. Government Hill.

Eira velutina, G. Loddiges, Government Hill. (C. 1696).

Eira leiophylla, Lindl. Government Hill. (C. 1,139, 1,240).

Claderia viridiflora, Hook. West Hill. (Government Hill 2,000 feet).

Spathoglottis plicata, Bl. Common from sea level up to 2,000 feet. (G. 72).

Tainia penangiana, Hook. fil. Government Hill. (C.).

Tainia Maingayii, Hook. fil. Maingay.

Agrostophyllum majus, Hook. fil. Government Hill 2,000-2,500 feet, on tall trees. (C.).

Cœlogyne macrobulbon, Hook. fil. Wallich 1969-2.

Cœlogyne tomentosa, Lindl. Government Hill. (C.).

Cœlogyne tomentosa var. *penangensis*. Maingay.

Cœlogyne Cumingi, Lindl. West Hill. (C.).

Cœlogyne speciosa, Lindl. Government Hill 2,000 feet. (C.).

Calanthe curculigoides, Wall. Government and West Hill 2,000-2,500 feet, common. (C.).

Eulophia squalida, Lindl. Government Hill. (C. 1064).

Cymbidium Finlaysonianum, Lindl. Common on trees and rocks on the sea coast. (C. 353).

Geodorum purpureum, var. Telok Bahang, rare. (C. 354).

Geodorum citrinum, Jackson. Drawing in Kew Herbarium.

Grammatohyllum speciosum, Bl. Not common. (C.).

Bromheadia palustris, Lindl. Common on sloping banks of red soil up to 2,500 feet. (C. 359).

Polystachya penangensis, Ridl. Government Hill 1,800 feet. (C. 1006).

Luisia tristis, Hook. fil. Penara Bukit, on Durian trees. (C. 1176).

Sarcochilus trichoglottis, Hook. fil. Orchards, on Mangosteen trees. (C.).

Sarcochilus (*Cuculla*) *lilacinus*, Griff. Telock Bahang, among long grass. (C.).

Sarcochilus (*Cuculla*) *brachystachys*, Hook. fil. Maingay.

Sarcochilus (*Cuculla*) *arachnites*, Reich. fil. Telok Bahang, on trees by the river. (C.).

Ærides suavissimum, Lindl. A very rare plant in Penang. I have collected it on two occasions only. (C.).

Renanthera elongata, Lindl. Ayer Hitam, rare. (C. 485).

(*Saccolabium penangianum*, Hook. fil.; is not a Penang plant. Sungkei River where my specimens were collected is in Perak. Fl. B. I. Vol. VI p. 57).

Saccolabium tenuicaule, Hook. fil. Waterfall and West Hill. (C. 994).

Saccolabium cornigerum, Ridl. ined. West Hill. (C.).

Acampe penangiana, Ridl. ined. Government Hill. (C. 1963)

Sarcanthus secundus, Griff. Near the coast. (C.).

Sarcanthus Scortechinii. Hook. fil. Coast. (C. 2310).

Cleisostoma spicatum, Lindl. Tanjong Bunga, common. (C. 1834).

Teniophyllum serrula, Hook. fil. Western Road, on shade trees. (C.).

Acriopsis indica, Wight, was collected by Maingay.

Acriopsis javanica, Reinw. Common all over the Island. (C. 2472).

Podochilus acicularis, Hook. fil. Government Hill 2,000-2,500 feet, on damp rocks, common. (C. 1733).

Appendicula callosa, Bl. Government Hill. (C. 358).

Appendicula Lewisii, Griff. West Hill 2,000 feet. (C. 993).

Appendicula Maingayii, Hook. fil. Government Hill 2,000 feet. (C. 2822).

Oxyanthera decurva, Hook. fil. Not seen. Government Hill, Maingay.

Galeola altissima, Rch. fil. Not common. (C. 352).

Galeola Hydra, Rch. fil. (C. 351).

Vanilla Griffithii, Rchb. fil. (*V. albida* Hook. fil. non Bl). Waterfall, not uncommon. (C. 2271).

Corymbis longiflora, Hook. fil. Balik Pulau, rare. (C.).

Anæctochilus brevilabris, Lindl. Telok Bahang. (C.).

Anæctochilus Reinwardtii, Bl. Government Hill. (C. 1063).

Hetæria obliqua, Bl. Pulau Betong. (C.).

Odontochilus calcaratus, Hook. fil. Government Hill 2,000 feet. (C. 2823).

Hœmaria discolor, Bl. Wallich No. 7390. (C.).

Zeuxine affinis, Benth. Government Hill.

Cryptostylis arachnites, Bl. Government Hill 2,500 feet. (C.).

Pogonia punctata, Bl. Waterfall, rare. (C.).

Habenaria lacertifera, var. *robusta*, Abundant. (C. 357).

Cypripedium barbatum, Lindl. Government Hill. (C.).

Apostasia Wallichii, Br. West Hill 2,500 feet. (C. 925).

Neuwiedia Lindleyii, Rolf. Sungei Penang. (C. 469).

Neuwiedia Curtisii, Rolf. Government Hill, rare. (C. 1186).

SCITAMINEÆ.

Globba Wallichii, Baker; herb. Government Hill. (C. 455).

Globba uliginosa, Miquel. Government Hill. King.

Globba pendula, Rox. Roxburgh.

Globba versicolor, Smith, (Fl. Brit. Ind.).

Globba sps. undetermined. (C. 956-2851).

Curcuma petiolata, Roscoe, bracts violet coloured. Common. (C. 1744).

Gastrochilus pulcherrima, Wall. Maingay.

Kæmpferia parvula, King. Government Hill 2,000 feet. Common.. (C.).

Kæmpferia rotunda, L. Government Hill. (C. 189).

Amomum sphærocephalum, Baker. Collected by Maingay.

Amomum megalocheilos, Baker. Cooly lines Government Hill. (C. 2419).

Amomum metriocheilos, Baker. Government Hill. (C. 1530).

Amomum biflorum, Jack. No specimen of this is known to exist. Can it be an Elettariopsis?

Zingiber gracile, Jack. Waterfall. Not common. (C.).

Zingiber spectabile, Griff. (C. 1200, 1978, 2161).

Costus speciosus, Smith. Common. (C.).

Costus Kingii, Baker. Pulau Betong. (C. 1976).

Elettariopsis Curtisii, Baker. West Hill 2,500 feet. (C. 1570).

Elttariopsis serpentina, Baker. Waterfall. C. 2276).

Alpinia galanga, Sw. Penara Bukit. (C.).

Alpinia Wroyii, King. Not identified.

Alpinia mutica, Rox. Sent to the Calcutta Gardens from Penang.

Alpinia Rafflesiana, Wall. Not seen.

Phrynium parviflorum, Rox. Government Hill. (C. 2420).

Canna indica, L. Common. (C.).

Canna indica, var., *flava*. Not common (C.).

Undetermined *Scitamineæ*. (C. 327, 2275, 2884).

HÆMODORACEÆ.

Peliosanthes Teta, Andr.; dwarf herb, seeds blue. Waterfall, common. (C. 139).

Peliosanthes humilis, Andrews. Maingay.

Peliosanthes albida, Baker; leaves long; fl. greenish. Government Hill 2,000 feet. (C. 753).

Peliosanthes, sp.; leaves long, fl. purple. (C. 2757).

Ophiopogon prolifera, Lindl. T. Lewis.

Ophiopogon sp. West Hill. Not *prolifera*. (C.).

AMARYLLIDEÆ.

Curculigo latifolia, Dryand. Common in dense jungle. (C.).

Crinum asiaticum, L. Common on the sea coast. (C. 1274).

TACCACEÆ.

Tacca cristata, Jack. Common at low elevations. (C. 336).

DIOSCOREACEÆ.

Dioscorea dæmonum, Rox. Climber. Muka Head. (C. 2415).

Dioscorea orbiculata, Hook. Government Hill. (C. 1900).?

Dioscorea oppositifolia, L. climber. Government Hill. (C. 2292).

Dioscorea laurifolia, Wall. (C. 60 63).?

Dioscorea gibbiflora, Hook. fil. Wallich 5106 B. in part.

Dioscorea bulbifera, L.? Pulau Betong. (C. 1565. 1943).

ROXBURGHIACEÆ.

Stemona Curtisii, Hook. fil.; twining, fl. pink. Waterfall. (C. 1522).

LILIACEÆ.

Smilax myosotiflora, A. De C. Porter.

Smilax lævis, Wall.; climbing shrub. Government Hill. (C. 1172).

Smilax extensa, Wall. Moniot's Road. (C. 1244).

Smilax polyacantha, Wall. Porter. Wall. Cat. 5127.

Smilax leucophylla, Bl. leaves large, glaucous beneath. Government Hill 1,000-2,000 feet. (C. 1145).

Dracœna brachystachys, Hook. fil.; small tree 10-12 feet high, 2-3 in. diam.; fl. white. (C. 2302).

Dracœna Porteri, Baker. Waterfall. (C. C.).

Dracœna terniflora, var. *Curtisii*, Hook. fil. Pulau Betong. (C. 901).

Dracœna gracilis, Wall.; small shrub. West Hill 2,500 feet. (C. 1186).

Dracœna Cantleyi, Baker; a large tree; fruit bright red the size of a cherry. Not common. (C.).

Dracœna, sp.; shrubby; panicle branched, 6-10 in. long. (C. 2269).

Dracœna Jackiana, Wall. cat. 5145. A. B. Collected by Porter.

Dianella ensifolia, Redoute. West Hill 2,000 feet. (C. 1701).

Gloriosa superba, L. Not common in Penang. (C.).

PONTEDERIACEÆ.

Monochoria hastæfolia, Presl; herb. Ditches. (C.).

Monochoria vaginalis, Presl; fl. blue. Common. (C. 1235).

XYRIDEÆ.

Xyris indica, L. "Jerangoo Padang." Paddy fields south of the Island. (C. 1927).

COMMELINACEÆ.

Commelina nudiflora, L.; creeping herb; fl. blue. (C. 1224).

Commelina benghalensis, L.; Common. (C. 1843).

Aneilema nudiflorum, Bl.; small herb; fl. blue; common in open damp places. (C. 1856).

Aneilema conspicuum, Kunth. Damp dense jungle. (C. 980, 1977).

Forrestia marginata, Hassk.; herb; stem creeping, rooting from the nodes. Pulau Betong. (C. 1948).

Cyanotis barbata, Don. Wallich.

Floscopa scandens, Lour. prostrate herb. Waterfall. (C.).

FLAGELLARIEÆ.

Flageliaria indica, L. "Rotan binni" Common. (C. 25).

Susum anthelminticum, Bl. Government Hill 2,000 feet. C. 335).

PALMEÆ.

Areca catechu, L. "Pinang." Cultivated and common on abandoned land. (C.).

Pinanga polymorpha, Becc.; stem 2-3 feet. (C.).

Pinanga disticha, Bl.; stem 2-6 feet. Pantie Achie. (C. 391).

Pinanga subruminata, Becc. about 1,500-2,000 King.

Pinanga malaiana, Scheff.; stem 8-12 feet. (C.).

Oncosperma horrida, (Griff) "Nibong." Common. (C.).

Iguanura Wallichiana, Hook. fil. Collected by Porter.

Arenga saccharifera Labill. Common. (C.).

Arenga obtusifolia, Mart. Waterfall Hill.

Caryota mitis, Lour.; stem 15-25 feet. One of the commonest palms in the Island. C. 2149).

Nipa fruticans, Wurmb. Common in tidal swamps. (C.).

Phœnix paludosa, Rox.; stem 10-25 feet. Swamps. (C.).

Licuala spinosa, Wurmb. (C.).

Licuala acutifida, Mart. Common. (C.).

Livistona cochinchinensis, Mart. (Lewis.).

Calamus Draco, Griff. Penang. Lewis.

Calamus javensis, Bl. West Hill. (C. 2268).

Calamus javensis subvar. purpurascens, Becc. Not identified.

Calamus javensis subvar. penangiana, Becc. Not identified.

Calamus melanacanthus, Mart. Penang according to Martius.

Calamus martianus, Becc. Penang, Gaudichaud.

Calamus verticillaris, Griff. (C. 2222. ? 2232. ?)

Calamus hystrix, Griff. Government Hill.

Calamus geniculatus, Griff. (C. 712, 1476. ?)

Calamus viminalis, Willd. Wallich.

Calamus Lewisianus, Griff. "Kichum" Penang. Lewis.

Calamus monticolus, Griff. Penang Hill half way up. Lewis.

Zalacca affinis, Griff.; leaves 12-15 feet; fruit pear shaped densely bristly. (C. 2435).

Zalacca glabrescens, Griff.; leaves 15-20 feet. Government Hill in damp shady jungle. (C.).

Zalacca edulis, Reinw. "Salak Kumbar" sent by Lewis to Griffith. (I do not think this is wild anywhere in the Malay Peninsula).

Zalacca Wallichiana, Griff.; is said to occur in Penang. Not seen.

Zalacca conferta, Griff. Not seen. Lewis sent it to Griffith under the name of Asam Kumbar.

Plectocomia elongata, Bl.; an immense climber. Government Hill 2,000-2,500 feet. (C. 2436).

Engessonia triste, Griff.; "Bertam;" stemless; leaves 15-20 feet. The most common of all the palms. (C. 2218).

PANDANEÆ.

Pandanus, sp.; stem 3-5 feet high; fruit about 2½ in. (C. 1821).

Pandanus, sp. several undetermined.

Pandanus helicopus, Miq. 6-10 feet high; fruit 4-5 in long. West Hill 2,500 feet. (C. 2272).

Freycinetia angustifolia, Bl.; stem slender. Court. (C. 1171).

Freycinetia scandens, Gaud.? Government Hill. Resembles *F. insignis* but has narrower leaves and bracts not red.

ARACEÆ.

Cryptocoryne ciliata, Fischer, Common in tidal swamps. (C. 1940).

Arisœma cuspidatum? Waterfall. (C. 1882).

Arisœma filiforme, Bl. Waterfall, not common. (C.).

Arsiœma Kunstleri, Hook. fil.; spathe green. Waterfall. (C. 2887).

Arisœma Scortechinii, Hook. fil. Government Hill 2,000 feet. (C. 143).

Arisœma Roxburghii, Kunth. is said to have been collected by Curtis on Government Hill in Flor. Brit. Ind.

Typhonium Roxburghii, Schott. Common in open spots. (C. 1858).

Typhonium Motleyanum, Schott. Pulau Tikus. (C. 2888).

Amorphophallus campanulatus, Bl. Common. (C.).

Amorphophallus Prainii, Hook. fil. Waterfall. (C.).

Pothos Curtisii, King. Batu Feringgi. (C. 808).

Pothos, sp. West Hill. Only one specimen collected. (C.).

Lasia heterophylla, Endl. Tidal swamps, common. (C. 1941).

Homalomena angustifolium, Hook. fil. Telok Bahang on stones in mid-stream, common. (C. 2886).

Homalomena, ovatum, Hook. fil. Wallich Waterfall. (C. 1884).

Homalomena humilis, Hook. fil. Government Hill.

Homalomena sagittifolia, Jung. Waterfall, common. (C. 1857).

Homalomena aromatica, Schott. Moniot's Road.

Homalomena Miqueliana, Schott; stem 2-3 ft. high. (C. 1881).

Homalomena obliquata, Hook. fil. Collected by Phillips.

Schismatoglottis longipes, Miq. Waterfall, damp ravines (2828).

Amydrium humile, Schott. Government Hill 2,500 ft. (C. 1855).
Raphidophora, sp. Batu Feringgi. (C. 1923).
Epipremnum giganteum, Schott. Collected by Roxburgh.
Epipremnum Maingayii, Pulau Betong. (C. 2885).
Epipremnum humile, Scott. Government Hill 2,500 feet. (C. 1855).
Epipremnum mirabile, Scott. Penang. Roxburgh not seen.
Anadendrum montanum, Scott. Collected by Wallich.
Anadendrum marginatum, Schott. Collected by Porter.
Aglaonema nitidum, Kth. was collected here by Jack.
Aglaonema simplex, Bl. (C. 1721).
Colocasia antiquorum, L. Pulau Betong. (C. 1933).

ERIOCAULONEÆ.

Eriocaulon Wallichianum, Common.

CYPERACEÆ.

Cyperus polystachyus, Rottbl. Waterfall. (C. 1784, 1864). var *laxiflorus*, Benth. (C. 1862).
Cyperus pumilus, L. Dato Kramat. (C. 1782).
Cyperus cuspidatus var. *angustifolia*. (C. 1831).
Cyperus compressus, L. Common. (C. 1779).
Cyperus Haspan, L. Very Common. (C. 1788).
Cyperus pulcherrimum Wight. Common in Rice fields.
Cyperus Iria, L. (C. 1780, 1871, 1952).
Cyperus distans, L. Common anywhere. (C. 875, 1785, 1832).
Cyperus rotundus, L. moderately Common. (C. 1781, 1953).
Cyperus pilosus, Vahl. Tanjong Bunga. (C. 1830).
Cyperus procerus, Rottbl. Waterfall. (C. 1787).
Cyperus auricomus, Sieb. Ditches; not Common. (C. 872).
Cyperus pennatus, Lour. Common. (C. 104).
Cyperus umbellatus, Benth. Waterfall, not common. (C. 491, 1783).
Cyperus turgidulus. Clarke. Tanjong Bunga. (C. 883).
Cyperus Griffithii, Steud. Open places in pure sand. (C. 884).
Cyperus Zollingerii, Steud. Waterfall, rare. (C. 1833).

Cyperus radiatus, Vahl. Bagian Jermal. (C. 1956).
Cyperus, sp. may be *flavidus*, Waterfall. (C. 1805).
Cyperus, sp. in way of *turgidulus*, Clarke. (C. 2173.)
Mariscus Dregeanus, Kunth. Tanjong Tokong. (C.).
Mariscus sieberianus, Nees. (C. 1955).
Mariscus cyperinus, Vahl. (C. 1786).
Mariscus microcephalus, Presl. Waterfall, common. (C. 1873, 1874).
Kyllinga brevifolia, Rottbl. Common all over the Island. (C. 1808).
Kyllinga monocephala, Rottbl. (C. 1823).
Fimbristylis nutans, Vahl. (C. 1868, 1869).
Fimbristylis schœnoides, Vahl. (C. 1822).
Fimbristylis miliacea, Vahl. (C. 1792).
Fimbristylis asperrima, Bœck. (C. 1595, 1793).
Fimbristylis filiformis, Kunth. (C. 1789).
Fimbristylis diphylla, Kunth. (C. 1790).
Fimbristylis globulosa, Vahl. (C. 1791).
Bulbostylis barbata, Kunth. (C. 885).
Scirpus grossus, L. (C. 350).
Scirpus debilis, Pursh. (C. 1904, 2178).
Scirpus mucronatus, L. (C. 1962.)
Eleocharis equisetina, Presl. (C. 1905, 2176).
Eleocharis variegata var. laxiflora. (C. 1265, 2177)
Fuirena glomerata, Lam. (C. 497).
Lipocarpha argentea, R. Br. (C. 1807).
Hypolyptrum giganteum, Wall. (C. 15. 490).
Mapania, sp. (C, 1820).
Remirea maritima, Aubl. (C. 1861).
Rhynchospora aurea, Vahl. (C. 1256).
Scleria lithosperma, Willd. (C. 1794).
Scleria hebecarpa, Nees. (C. 1828).
Scleria sumatrensis, Retz. (C. 22).
Scleria Steudeliana, Bœck. (C. 1907).
Carex indica, L. (C. 1207).
Carex cryptostachys, Brongn. (C. 1910).

GRAMINEÆ.

Paspalum scrobiculatum, L. (C. 492).
Paspalum conjugatum, Berg. (C. 493).
Paspalum distichum, Burm. (C. 1957).
Isachne puchella, Roth. (C. 496).
Isachne australis, Br. (C. 1813).
Panicum sanguinale var. *australe*, (C. 1801, 1914).
Panicum parvulum, Trin. (C. 1919).
Panicum colonum, L. (C. 68).
Panicum myosuroides, R. Br. (C. 1960).
Panicum Crus-galli, L. (C. 1958).
Panicum indicum, L. (C. 1802).
Panicum miliare, Lam. (C. 1803).
Panicum cimicinum, Retz. (C. 1829).
Panicum incomptum, Trin. (C. 132, 1809, 1908).
Panicum nodosum, Kunth. (C. 1917, 1918).
Panicum auritum, Presl. (C. 1818).
Panicum trigonum, Retz. (C. 1824).
Panicum Myurus, Lam. (C. 1903).
Panicum luzonense, Presl. C. 1915).
Panicum multinode, F. (C. 1961).
Panicum radicans, Retz. (C. 1916).
Panicum parvulum, Nees. (C. 1814).
Panicum fimbriatum, Nees, (C. 1257).
Oplismenus compositus, R. and S.
Oplismenus Burmanni, Beauv. (C. 1825).
Setaria glauca, Beauv. (C. 1259, 1959).
Leptaspis urceolata, Br. and Benn. (C. 1758).
Coix lachryma, Jobi; L. (C. 58).
Leersia hexandra, Swartz. (C. 1902).
Perotis latifolia, Ait. (C. 9, 1817).
Zoysia pungens, Willd. (C. 1812).
Imperata arundinacea, Cyr. "Lalang" (C. 1816).
Pogonatherum polystachyum, R. and S. (C. 877).
Ischœmum muticum, L. (C. 1810).
Ischœmum ciliare, Retz. (C. 1806).
Ischœmum timorense, Kunth. (C. 2167).
Rottboellia glandulosa, Trin. (C. 1913).

Andropogon contortus, L. (C. 1906, 1912).
Andropogon nardus, L. (C. 91).
Andropogon squarrosus, L. (C. 1819).
Chrysopogon aciculare, Trin. (C. 1799.
Themeda gigantea var. *villosa*. (C. 1971).
Themeda arguens, Hack. (C. 1911).)
Sporobolus elongatus, R. Br. (C. 876).
Sporobolus diander, Beauv. (C. 1826).
Cynodon dactylon, Pers. (C. 1811).
Eleusine indica, Gærtn. (C. 1796).
Eleusine coracana, Gærtn. (C. 1118).
Eleusine ægyptiaca, Pers. (C. 1797).
Leptochloa chinensis, Nees. (C. 1951).
Phragmites Roxburghii, Kunth. (C. 125).
Eragrostis unioloides, R. and S. (C. 1800).
Eragrostis Brownii, Kunth. (C. 1805).
Eragrostis Wightiana, Bl. (C. 882).
Eragrostis plumosa, Retz. (C. 1827, 2169).
Eragrostis pilosa, Beauv. (C. 1804).
Centotheca lappacea, Desv. (C. 36, 1815).
Thysanolæna acarifera, Nees. Government Hill. (C. 1909).
Arundo donax, cultivated. (C. 1981).
Bambusa nana, Roxb. The Hedge bamboo is cultivated. (C. 1720).

FILICES.

Gleichenia, longissima, Bl.; fronds 8-10 feet long. Government Hill 2,000-2,500 feet. (C. 531).
Gleichenia flagellaris, Spreng. "Resam." Common up to 1,000-1,500 feet. (C. 533).
Gleichenia hirta, Bl. Government Hill, Hullett.
Gleichenia dichotoma, Willd. Abundant. (C. 532).
Gleithenia, sp.; appears to be distinct from either of the preceding. (C. 534).
Cyathea Brunonis, Wall.; stem 3-4 feet; frond 2-3 feet. Government Hill 2,000-2,500 feet. (C. 535).
Amphicosmia alterans, Hook. fil., collected by Wallich, Sir William Norris and Cantley.

Alsophila latebrosa, Hook. fil.; stem tall. Government Hill. (C.).

Alsophila glauca, Smith; stem stout. Not uncommon. (C.).

Alsophila comosa, Hook. Government Hill. (537).

Alsophila glabra, Hook. Government Hill. (538).

Cibotium Barometz, Link. Government at 1,000 (Cantley).

Hymenophyllum tenellum, Klein. On damp rocks at 1,500-2,000 feet. (C. 540).

Hymenophyllm rarum, Br. Government Hill. (Bishop Hose).

Hymenophyllum polyanthos, Sw. var. *Blumeanum;* fronds 12-18 in. long. Damp shady ravines. (C. 1724).

Hymenophyllum australe, Willd. (*Javanicum Spreng*). Government Hill. (C. 539). var. *Badium*. Government Hill (Hullett).

Hymenophyllum Smithii, Hook. West Hill 2,500 feet. (C.).

Hymenophyllum aculeatum, V. D. B. at 3,000 feet. King.

Trichomanes digitatum, Sw. West Hill 2,000 feet. (C. 1174).

Trichomanes bipunctatum, Poir. Government Hill, on rocks (C. 542).

Trichomanes javanicum, Bl. West Hill, damp ravines. (C. 541).

Trichomanes radicans var. *Kunzeanum*, Government Hill. (Hullett).

Trichomanes pallidum, Bl. Not seen. Collected by Lady Dalhousie.

Humata heteropylla, Smith. Not seen.

H. angustata, Wall. West Hill, on trees. (C. 543).

H. pedata, Smith. Abundant in many places. (C. 544).

Leucostegia hymenophylla, Not identified.

Leucostegia affinis, Hook. Ayer Hitam. (C. 545).

Prosaptia Emersonii, Hook. fil. Moniot's Road, not uncommon. (C. 546).

Davallia solida, Sw.; caudex stout; fronds large. Common on rocks at low elevations. (C. 547).

Davallia elegans, Sw. Penang Hill.

Davallia Lorrainii, Hance; fronds 6-8 in. Government Hill 2,000-2,500 feet. (C.).

Microlepia pinnata, Cav.; fronds 12-18 in. Government Hill 2,000-2,500 feet, abundant. (C. 548).

Microlepia speluncæ L. (C. 629).

Stenoloma chinensis, Sw.; var. *Veitchii*. Government Hill 1,500-2,000 feet. (C. 549).

Lindsaya cultrata, Sw.; fronds 6-7 in. Waterfall, rare (C. 1710).

Lindsaya scandens, Hook. Government Hill. (C. 550).

Lindsaya flabellulata, Dry.; a very variable plant. (C. 553).

Lindsaya trapeziformis, Dry. Government Hill. (C. 551, 554).

Lindsaya divergens, Wall. Government Hill 2,000 feet. (C. 552).

Lindsaya lanuginosa, Wall. Not seen.

Schizoloma davallioides, Bl. Government Hill. (Hullett).

Schizoloma lobata, Poir. Government Hill.

Adiantum lunulatum, Burm. Balik Pulau. (C.).

Adiantum flabellulatum, L; frond 8-12 in long. Abundant in one or two places. (C. 555).

Cheilanthes tenuifolia, Sw. Steep banks, Ayer Hitam. (C. 556).

Pteris longifolia, L. Not uncommon on old brick walls. (C.).

Pteris cretica, L. Government Hill.

Pteris pellucida, Presl. West Hill on boulders in mid-stream. (C. 998).

Pteris crenata, Sw. Common in hedges. (C. 557).

Pteris semipinnata, L. Batu Hitam 1,000 feet, rare. (C. 935).

Pteris Dalhousieæ, Hook. Not seen. Apparently only collected by Lady Dalhousie.

Pteris quadriaurita, Retz. Balik Pulau road. (C. 1,001).

Pteris longipinnula, Wall. Not seen.

Pteris aquilina, L. Not uncommon at 1,000-2,000 feet and occasionally near sea-level. (C.).

Campteria biaurita, L. Pulau Betong. (C. 538).

Litobrochia incisa, Thunb. Common. (C.).

Litobrochia marginata, Bory. Balik Pulau. (C.).

Ceratopteris thalictroides, L. Ditches and swampy places. (C. 113).

Blechnum orientale, L. Abundant, up to 2,000 feet. (C.).

Blechnum Finlaysonianum, Wall. Government Hill 2,000 feet, not common. (C. 1002).

Thamnopteris nidus, L. Common on trees and rocks, not far from the coast. (C. 559).

Thamnopteris nidus, var. *phyllitidis*.

Asplenium Griffithianum, Hook; frond simple 6-10 in long. (C. 656).

Asplenium subavenium, Hook. Collected by Mactier.

Asplenium unilaterale, Lam. Damp ravines, rare. (C. 567).

Asplenium longissimum, Bl. Penara Bukit on steep banks, abundant. (C. 561).

Asplenium Wightianum, Wall. Not common. (C. 561).

Asplenium tenerum, Forst. Not uncommon on trees, at about 2,000 feet elevation. (C. 560).

Asplenium hirtum, Kaulf. Batu Hitam, rare. (C. 564).

Asplenium macrophyllum, Sw. Common. (C. 562, 566).

Asplenium paradoxum, Bl. Not identified.

Asplenium nitidum, Sw. Not common. (C. 568).

Asplenium Mactieri, Bedd. Collected by Mactier.

Asplenium laserpitiifolium, Lam. Government Hill. (C. 563).

Asplenium bulbiferum, Forst. not seen.

Asplenium subserratum, Bl. Moniot's Road. (C. 570).

Asplenium pallidum, Bl. Penara Bukit. (C. 1268).

Diplazium porrectum, Wall. West Hill 2500 H. (C. 1000).

Diplazium tomentosum, Hook. fil. Penara Bukit. (C. 1267).

Diplazium chlorophyllum, Bak. (C.).

Diplazium Bantamense, Bl. not seen.

Diplazium speciosum, Bl.? (C. 571-999) Government Hill.

Diplazium sylvaticum, Presl. var. *Prescottianum;* Wall. Government Hill.

Diplazium Sorzogonense, Presl. fronds 18-24 in (C. 1723).

Anisogonium cordifolium, Mett. Penara Bukit, rare. (C. 1194).

Anisogonium esculentum, Presl. Common in damp places (C.).
Anisogonium lineolatum, Mett. Moniot's Road. (C. 573).
Hemidictyon Finlaysonianum, Wall. Not seen.
Mesochloena polycarpa, Baker. not uncommon. (C. 574).
Aspidium aculeatum, Sw. Government Hill 1000-2000 feet, common. (C. 575).
Aspidium semibipinnatum, Wall. Not seen.
Aspidium variolosum, Wall. Waterfall. (C. 1608). Bishop Hose.
Aspidium vastum, Bl. Penang.
Aspidium Singaporianum, Baker. Waterfall. (C. 576).
Aspidium polymorpha, Baker. Waterfall. common (577).
Lastrea immersa, Bl. Open places, common. (C. 580).
Lastrea calcarata, Hook. fil. Government Hill (Hullett).
Lastrea crassifolia, Bl. Government Hill. (C. 579).
Lastrea intermedia, Bl. and var. *Blumei*. (C.).
Nephrodium intermedium, Baker. Government Hill. (C. 636).
Nephrodium unitum, R. Br. Common. (C. 583).
Nephrodium molle and the var. *procurrens*, Baker. Government Hill. (C. 585).
Nephrodium pennigerum, Bl. Government Hill, Hullett.
Nephrodium aridum, Baker. Pulau Betong. (C. 581).
Nephrodium moulmeinense ? (C. 584).
Nephrodium urophyllum, Bedd. (C. 582).
Nephrodium multilineatum, Wall. Penang Hill, Wallich.
Nephrolepis exaltata, Schott. Common. (C.).
Nephrolepis volubilis, J. Smith. (C. 587).
Nephrolepis acuta, Presl. (C.).
Oleandra neriiformis, Cav. Government Hill, rare. (C. 1607).
Polypodium subevenosum, Baker; small plant; fronds 3-4 in. Government Hill on damp rocks. (C. 588).
Polypodium universe, Bak. (C.).
Polypodium decorum, Brack. Government Hill, on trees and rocks. (C. 589).
Dictyopteris Barberi, Hook. fil. Not seen.
Goniophlebium verrucosum, Wall. Not seen.

Niphobolus adnascens, Sw. Very common. (C. 590, 591).

Niphobolus penangianus, Hook; fronds 12-18 in. Government Hill, towards Ayer Hitam. (C. 592).

Pleopeltis sinuosa, Wall.; frond simple 6-9 in. Ayer Hitam, on trees. (C. 595).

Pleopeltis stenophylla, Bl.; fronds about 6 in. (C. 602).

Pleopeltis angustata, Sw. Top of Government Hill. (C. 596).

Pleopeltis nigrescens, Bl.; stipe 6-18 in.; frond 12-18 in. Damp places, on rocks. (C. 600).

Pleopeltis membranacea, Don. Government Hill. (C. 597).

Pleopeltis musæfolia, Bl.; frond 2-3 feet. West Hill at about 2,000 feet, rare. (C. 598).

Pleopeltis phymatodes, L. Sea coast, abundant. (C. 599).

Drynaria quercifolia, L. Waterfall, common. (C. 594).

Drynaria rigidula, Sw. Government Hill. (C. 593).

Drynaria palmata, Bl. Government Hill, on damp rocks. (C.).

Dipteris Horsfieldii, Br.; stipe 3-7 feet; frond 1-3 feet. West Hill 2,000-2,500 feet, abundant. (C. 632).

Gymnogramma alismæfolia, Hook. fil.; stipe 10-12 in.; frond 12-18 in. West Hill 2,000 feet. (C. 603).

Gymnogramma avenia, Baker; frond 6-18 in. Damp shady places at 1,000-2,000 feet. (C. 605).

Selliguea Feeii, Hook. fil.; stipe 4-10 in.; frond 3-5 in. long. Government Hill, common. (C. 604).

Selliguea involuta, Don. Not identified.

Drymoglossum piloselloides, Presl. Abundant. (C. 1003).

Meniscium salicifolium, Wall. Ayer Hitam. (C. 616).

Antrophyum plantagineum, Kaulf. (C. 606).

Antrophyum reticulatum, var. *parvum* of Beddome. Not identified.

Vittaria elongata, Sw. Common. (C.).

Vittaria scolopendrina, Presl.; fronds 18-24 in Government Hill, not common. (C. 608).

Tœnitis blechnoides, Sw. Government Hill, common. (C. 610).

Stenochlœna Norrisii, Hook. Government Hill 2,000 feet. (C. 1606.?)

Stenochlœna palustris, L. Waterfall &c. abundant. (C. 611).

Polybotrya appendiculata, Willd. Common. (C. 612).

Gymnopteris sub-repanda, Hook. fil.; stipe of barren frond 6-9 in.; frond 6-12 in. Balik Pulau, rare. (C. 628).

Gymnopteris virens, Wall. Government Hill. (C. 618.?)

Gymnopteris flagellifera, Wall. Government Hill. (C. 615).

Gymnopteris spicatum, L. West Hill, common. (C. 613, 614).

Acrostichum aureum, L. Tidal swamps, abundant. (C.).

Photinopteris rigida, Wall. West Hill, rare. (C. 619).

Photinopteris drynarioides, Hook. fil. Government Hill near the Bungalow, not common. (C.).

Platycerium biforme, Bl. More or less common all over the Island (C. 639).

Schizæa digitata, Sw. West Hill (C.)

Lygodium circinatum, Sw. (C. 622).

Lygodium scandens, var. *microphylla*. Br. (C. 623).

Lygodium pinnatifidum, Sw. (C. 623).

Lygodium polystachyum, Wall. Waterfall, not common (C. 625).

Angiopteris evecta, Hoffm. Not uncommon (C.).

LYCOPODIACEÆ.

Lycopodium cernuum, L. Common in Penang.

Lycopodium phlegmaria, L. collected by Wallich.

Lycopodium Dalhousieanum, Spring. collected by Lady Dalhousie.

Lycopodium nummularifolium, Bl. collected by Lady Dalhousie.

Selaginella pinangensis, Spring. collected by Gaudichaud.

Selaginella trichobasis, Baker. collected by Wallich.

Selaginella alutacea, Spring. Damp banks on Penang Hill Maingay.

Selaginella atroviridis, Spring. Wallich, Gaudichaud.

Selaginella plumosa, Bak. Wallich No. 122.

Selaginella Wallichii, Spring. Wallich, Lady Dalhousie.
Selaginella Willdenovii, Spring. (C.).
Selaginella caulescens, Spring. Wallich, Gaudichaud.
Selaginella caulescens, var. *argentea*, Wallich 127. Lady Dalhousie.
Selaginella chrysocaulos, Spring. Wallich 127 bis.
Psilotum triquetrum Sw. collected by Wallich.

THE BOTANISTS OF PENANG.

The number of students of botany in Penang in past years has not been great, and of some of those that are here mentioned I can get little or no information. Some whose names appear associated with plants seem merely to have collected a few specimens and transmitted them to Europe but as they are sometimes the only authority for the occurrence of certain plants in Penang, I have thought it as well to collect what information I can about them.

WILLIAM ROXBURGH was born in 1759 and took charge of the Calcutta Gardens in 1793. He seems to have never visited Penang, but received a certain number of living plants thence which he cultivated in the Gardens, and described in the *Flora Indica* published after his death in 1820.

Some of these such as *Melia tomentosa* and *Alpinia mutica* have not since been met with in Penang, and it is very likely that they were either cultivated in Penang and sent to him as if native there, or were wrongly labelled in the Calcutta Gardens.

In 1807 WILLIAM HUNTER, of the Bengal Medical Establishment, published a paper in the Linnean Society's Transactions on Gambier, as cultivated in Penang.

NATHANIEL WALLICH was born in Copenhagen in 1786. and went to India in 1807, taking charge of the Calcutta Gardens then belonging to the East India Company in 1815. He made his first great exploring expedition into Nepal in 1820, and returning thence ill went for a voyage to Penang and Singapore and visited several other parts of the Peninsula

(1822). He remained here for five months residing in Singapore in a house called Botany Hall on what is now Mount Wallich near the New Harbour Docks. While here he met Sir STAMFORD RAFFLES and WILLIAM JACK and also G. FINLAYSON, all of whom contributed plants to his herbarium.

WILLIAM JACK accompanied RAFFLES as botanist to Bencoolen in Sumatra in December, 1818, and later went to Penang. In both of these localities he made most extensive collections and published two short papers in the Malayan Miscellanies which have been reprinted in Hooker's Botanical Magazine and later in the Indo-Malaysian Essays of this Society. JACK'S health broke down in 1822, and he died at Bencoolen as he was starting for the Cape of Good Hope to recover his health. A number of his plants were sent to WALLICH and distributed with the East Indian Company's herbarium. The rest with all his manuscripts and a large series of over two thousand drawings were on board the illfated vessel, the "Fame" which was burnt at sea on the way to England, the whole collection being destroyed. Most of the plants described by JACK from Penang and those that were sent by him to WALLICH have been re-discovered of late years, but a few have escaped recent collectors, and it possible that some of those which were distributed by WALLICH as from Penang were really collected in Sumatra. JACK'S name has been associated with several Malayan plants including the beautiful Rubiaceous tree, *Jackia ornata.*

GEORGE FINLAYSON was a native of Thurso, who became Assistant Surgeon in the 8th Regiment of Light Dragoons and was attached to the Mission from the Bengal Government to Siam and Cochin China in 1821. He returned to Singapore in 1822 seriously ill with consumption and died shortly after reaching England.

He made good collections in the various part of the peninsula he visited, chiefly in Siam and Cochin China, and was the first botanist to visit the Dindings where he collected *Dracœna Finlaysoniana* which grows there to this day.

Many of his plants were sent to the East India Company's Herbarium and were finally distributed when that Herbarium

was broken up. Unfortunately many specimens appear not to have been adequately labelled, and some of those cited in books as coming from Penang may have come from Cochin China. WALLICH named the rare Asclepiad *Finlaysonia obovata* after him and his name has been perpetuated by two of our commonest and most charming orchids *Bromheadia Finlaysoniana* and *Cymbidium Finlaysonianum.*

After his return to Calcutta Wallich received many plants from collectors employed in Penang and chief among these was GEORGE PORTER, whose name is associated with the common dwarf Dracæna *Dracæna Porteri.* Dr. Prain has kindly examined the Wallichian correspondence at Calcutta to find out something about this collector, and Mr. KYNNERSLEY has also given me some additional information about him. The latter says that in August 1822 the Headmaster of the Penang Free School resigned and Mr. PORTER who was recommended by Dr. WALLICH was appointed at a salary of $100.

The same year however a Government Botanic Garden was started near Ayer Hitam and Porter was put in charge, though a judge, Mr LEYCESTER, was nominally the curator. He remained there till 1834, at least, when the gardens were sold by Governor Murchison for 1250 rupees. He did not apparently have a very happy time as Superintendent of the gardens for Governor IBBETSON or rather his wife made trouble because Porter did not supply enough vegetables for their table. In 1834 he sent the first plants of Patchouli to Calcutta Gardens, and this is the last I have heard of him, Dr. PRAIN thinks that he got appointed Schoolmaster again through the interests of WALLICH'S friends.

The East India Herbarium was eventually dispersed, the study set being preserved at the Linnean Society's rooms in London. WALLICH compiled and published a catalogue of it, and the plants distributed are quoted in this paper as (Wall. cat.) After this period botany seems to have faded away in Penang, and nothing was done in it for many years.

Mention must be made however of Governor W. E. PHILLIPS who sent some plants to Kew which are mentioned in the Flora of British India. Mr. KYNNERSLEY is my authority for the fol-

lowing notes. Mr. PHILLIPS was appointed Secretary to Government in 1800, and became Collector of Customs and Land Revenues in 1805, and eventually Governor it 1820. He retired in 1824, being presented then by the inhabitants of Penang with a gold cup. He was an able man and gave special attention to the land question which he seems thoroughly to have understood. He resided at Suffolk House where Crawfurd visited him in 1819, and describes the place as an English gentleman's mansion and park where cloves and nutmegs in full bearing were substituted for oaks, elms, and ashes. The grounds contained two to three hundred spotted deer. It was he who started the Ayer Hitam gardens.

The next botanist who appears at Penang was a Colonel Walker who in or about 1837 collected a number of plants which were distributed to various European Museums.

In 1842 or thereabouts GEORGE GRIFFITH came as Government Botanist to Malacca. He was well known for his explorations in Assam, where he had made extensive collections. He seems never to have visited Penang but received a few plants thence from T. LEWIS, Assistant Resident Councillor, after whom he named *Appendicula Lewisii* and *Calamus Lewisianus*.

Amongst other collectors who sent plants to England about this time may be mentioned Sir WILLIAM NORRIS (after whom *Norrisia* was named) who sent specimens to Sir WILLIAM HOOKER, and Lady DALHOUSIE, who is better known for her Botanical work in the Himalayas but who sent home also a collection of plants from Penang.

WILLIAM LOBB, an Orchid collector for Messrs. VEITCH visited this region in 1845 in search of ornamental plants for cultivation and besides sending home many plants alive, made a collection of dried specimens, which have been distributed to various Herbaria. Unfortunately many of these were either not at all or wrongly localised and as he collected not only in Penang and Singapore but also in Borneo and the Philippine islands, some of the plants quoted in books as, "Penang LOBB," were really collected in the further islands of the Malay Archipelago. Among the well-

known plants which bear his name are *Aeschynanthus Lobbii* and *Dipteris Lobbiana*.

Surgeon-General Maingay resided in Malacca from 1863 to 1868 and thence visited Penang and made extensive collections of plants, in both these places as well as in Singapore. After his death in the Andaman islands in 1870, his collections were bequeathed to Kew and the plants described in the Flora of British India and other publications. Most of the species said to have been collected by him in Penang have been since rediscovered, but perhaps some of those which have not been met with again have been wrongly localised as his plant-tickets often had no localities marked on them.

The flora of Penang has probably altered but little since Wallich's time. There has not been here the extensive denudation of forests which has occurred in Singapore, but without doubt the flora of the lowlying country especially near the town has undergone much change. Large as the number of known species in so limited an area is, without doubt many more remain undiscovered and with them perhaps we shall get again most of those formerly found only by the earlier collectors. In this catalogue the earlier authorities are only quoted for species which have not been seen of late years.

H. N. R.